PHOTO BY IAN MURRAY

Fig. 1. Hatchling *Terrapene ornata luteola* feeding on Thread-leaf Groundsel (*Senecio flaccidus* var. *douglasii*) petals on 6 October 2008.

PHOTO BY RAQUEL BETANCOURT

Fig. 1. Aftermath of predation attempt by *Paleosuchus trigonatus* on the porcupine *Coendou bicolor*.

the nest was again excavated, revealing two hatchlings buried in the bottom of the nest cavity. The nest was carefully re-buried and covered. On 27 June 2003, the area received its first summer rainfall, and the nest was visited, but no emergence noted. On 29 June the site was visited once again, and 2 hatchlings (SCL = 38.1, 36.3 mm) were noted on the surface, under the cage (MSB 78220, 78221). The cavity was exhumed, revealing that out of a clutch of three eggs, two had been viable. These young remained within the nest cavity for at least 266 days. To my knowledge, this is the first documented case of hatchling *T. o. luteola* overwintering in the nest. Additionally, hatchling emergence may vary based on geography or local rainfall patterns.

Observations on captive 'backyard' turtles in Albuquerque, New Mexico (35.08482°N, 106.61151°W, WGS84; 1578 m elev.) also indicate that hatchlings overwinter within the nest cavity and emerge the following summer. However, on 6 October 2008, I observed a hatchling *T. o. luteola* (SCL = 38.4 mm, 12.9 g) active on the surface and feeding on Thread-leaf Groundsel petals (*Senecio flaccidus var. douglasii*) in a central New Mexico population on the Sevilleta National Wildlife Refuge (34.401643°N, 106.662123°W, WGS84; 1567 m elev.). Not only do these observations suggest plasticity for hatchling *T. o. luteola* emergence, but this feeding record adds to the paucity of information available describing hatchling *T. ornata* feeding ecology (Fig. 1).

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CROCODYLIA – CROCODILIANS

***PALEOSUCHUS TRIGONATUS* (Schneider's Smooth-fronted Caiman). PREY.** Despite being a widespread species, the natural history of the Schneider's Smooth-fronted Caiman (*Paleosuchus trigonatus*) is little known due to its habitat preferences and cryptic behavior (Magnusson and Lima 1991. J. Herpetol. 25:41–48). Its main habitat comprises the closed-canopy streams and rivers of forested regions through the Amazon and Orinoco drainage basins and the fluvial coastal systems of the Guyanas (Magnusson and Campos 2010. *Paleosuchus trigonatus.* Crocs. CSG:43–45). Like all crocodilians, *P. trigonatus* is a generalist predator consuming a wide variety of prey, however, its diet includes a higher proportion of terrestrial vertebrates than other Amazonian alligatorids (Magnusson et al. 1987. J. Herpetol. 21:85–95).

On 5 February 2011 at 1030 h, we witnessed a unusual predation attempt by a *Paleosuchus trigonatus* (ca. 150 cm total length) on a porcupine (*Coendou bicolor*) at Playas de Cuyabeno (0.31428°S, 75.96146°W, 213 m elev.), Reserva de Producción Faunística Cuyabeno, Sucumbíos Province, Ecuador. The locality lies within tropical rainforest and the observation was made during the dry season, which extends from December to March in this region. We could not determine if the predation attempt was successful, but it was evident that the caiman attacked the porcupine, as its head and jaws were covered with quills (Fig. 1). When captured, the caiman appeared stressed, as the porcupine's quills (up to 5 cm long) had penetrated 0.5 cm into the flesh of caiman. The caiman was covered by leaf litter under a large, overhanging horizontal root, at a small salt lick with footprints of several mammals evident, suggesting that the caiman attacked the porcupine nearby. Magnusson et al. (1987, *op. cit.*) reported that adult *P. trigonatus* consumed mammals such as rats (*Oryzomys* sp. and *Proechimys* sp.), agouti (*Dasyprocta* sp.), monkey (undetermined), a marsupial (*Metachirus nudicaudatus*), armadillo (*Dasypus novemcinctus*), and porcupine (*Coendou* sp.) in Central Amazonia, Brazil. Therefore, our observation supports predation on porcupines, and suggests that adult *P. trigonatus* forage near salt licks.

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LIZARDS — SQUAMATA

***ACANTHODACTYLUS BOSKIANUS* (Bosk's Fringe-fingered Lizard). BIFURCATION.** *Acanthodactylus boskianus* is a diurnal, ground dwelling, medium to large-sized lacertid lizard. It is one of the most widespread species of the genus ranging from West Sahara, through all of North Africa (including the Sahel) to the Arabian Peninsula and east to SW Iran northwards to Southern Turkey (Sindaco and Jeremcenko 2008. The Reptiles of the Western

Fig. 1. Adult *Acanthodactylus boskianus asper* with bifurcated tail.

Palearctic. Edizioni Belvedere, Latina, Italy. 579 pp.). *Acanthodactylus boskianus* usually occurs in arid and desert ecosystems and is an ecologically plastic species which occurs on variety of habitats, typically inhabits coarse substrates with moderate vegetation. This species is often the most conspicuous and abundant lizard in arid and desert regions in its distribution range.

On 12 May 2011 we captured three adult individuals of the subspecies *A. b. asper* in an open area with thorny bushes in Wadi Paran, southern Israel (30.337°N, 34.946°E). Lacertids are known to readily autotomize their tails (Fitch 2003. J. Herpetol. 37:395–399; Pafilis et al. 2009. Evolution 63:1262–1278). In order to collect tissue samples from these specimens we cut the tips of their tails, and kept the animals alive for breeding at the I. Meier Segals Garden for Zoological Research at Tel-Aviv University (collection was done under INPA permit # 38074). The specimens were kept in plastic terraria, and their tails regenerated. In one female (Fig. 1; 66 mm SVL; 6.6 g), the regenerated tail had bifurcated 4 cm posterior from the cloaca, with both tail tips at even lengths of 50 mm. This individual is the only *Acanthodactylus* specimen (out of 46 individuals we kept, belonging to six species) that did not flee in the presence of humans. We did not observe bifurcated tails in *Acanthodactylus* specimens in the field, nor did we among the >1000 specimens (in 9 species, including 391 *A. boskianus* specimens) kept at the Tel-Aviv University Zoological Museum.

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***AMPHISBAENA ALBA* (Giant Worm Lizard). PREDATION.** *Amphisbaena alba* is a species widely distributed in South America (Gans 2005. Bull. Am. Mus. Nat. Hist. 289:1–130). In Brazil is found in different ecosystems, where it is primarily fossorial (Moura et al. 2011. *In* Herpetologia do Estado de Pernambuco. 440 pp.; Vitt et al. 2008. *In* Guia de Lagartos da Reserva Adolpho Ducke - Amazônia Central. 175 pp.). This species can be an important prey item for some bird species, being reported in the diet of the hawk *Rupornis magnirostris* in an area of Atlantic Forest in southern region of Brazil (Santos and Rosado 2009. Revista em Agronegócios e Meio Ambiente 2:421–430). The White-naped Jay (*Cyanocorax cyanopogon*) is a bird endemic to Brazil, belonging to the family Corvidae. It is a generalist and has the habit of forming conspecific aggregations (Sick 1997. Ornitologia Brasileira. Editora Nova Fronteira, Rio de Janeiro, Brazil. 912 pp.).

PHOTO BY LEONARDO BARBOSA DA SILVA

Fig. 1. Predation of *Amphisbaena alba* by *Cyanocorax cyanopogon* in the Floresta Nacional do Araripe, Ceará, Brazil. Record: CHP-UFRPE N°2800.

On 20 August 2012 at 0740 h, at the edge of a forested area located in Floresta Nacional do Araripe (7.3838°S, 39.3544°W; WGS 84), Ceará, Brazil, we observed a group of five individuals of *C. cyanopogon* preying on an individual of *A. alba* (Fig. 1). The prey was on the ground when five jays approached, emitting intense vocalizations. Two individuals of the group attacked the amphisbaenian, pecking it in the head and tail with their beaks. A third individual then joined them and also began to peck the prey. When the *A. alba* ceased resistance, it was taken into the forest, where other individuals of the group approached and began to feed on the prey. This is the first record of predation reported for *A. alba* by *C. cyanopogon* in the northeastern region of Brazil. The images of predation were filed in the Collection of Herpetological and Paleoherpetological of Federal Rural University of Pernambuco - UFRPE, Recife, Pernambuco, Brazil.

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***ANOLIS CAROLINENSIS* (Green Anole). PREDATION.** A wide variety of predators have been documented for Green Anoles, including birds (e.g., Arndt 1975. Florida Sci. 58:249–251; Palmer and Braswell 1995. Reptiles of North Carolina. Univ. of North Carolina Press, Chapel Hill. 412 pp.), frogs (Hoffman and Johnson 2008. Herpetol. Rev. 39:339), snakes (Wharton 1969. Bull. Florida St. Mus. 14:227–272), other lizards, including conspecifics (Campbell and Gerber 1996. Herpetol. Rev. 27:106; Gerber and Echternacht 2000. Oecologia 124:599–607; Netting 1940. Copeia 1940:266), and wolf spiders (Corey 1988. J. Aranachol. 16:392–393). Orb web spiders usually catch and consume invertebrates, and are known to occasionally eat small vertebrates such as small snakes (Burt 1949. Herpetologica 5:127; Groves 1978. Bull. Maryland Herpetol. Soc. 14:44–46) and the lizards *Anolis porcatus* and *A. sagrei* in the Caribbean (Armas 2001. Revista Ibérica de Aracnologia 3:87–88; Armas and Alayón 1987. Poeyana 344:1–18). Here we describe the first successful predation of an *A. carolinensis* by an orb weaving spider.

Fig. 1. An *Anolis carolinensis* captured by the orb weaver *Neoscona domiciliorum.*

On 11 October 2008 on Jekyll Island, Glynn Co., Georgia (31.058333°N, 81.419444°W; WGS84), an adult *A. carolinensis* was observed wrapped in the web of a female orb weaver (*Neoscona domiciliorum*) (Fig. 1). Females of this spider are common in moist woodland habitats dominated by the live oak *Quercus virginiana* (Edwards 2003. Florida Coop. Ext. Service, DPI Entomology Circular 266, Gainesville, Florida. 4 pp.) where *A. carolinensis* may also be abundant (Jensen et al. 2008. Amphibians and Reptiles of Georgia. Univ. Georgia Press, Athens, Georgia. 575 pp). Adult female *N. domiciliorum* tending eggs will leave their webs up during the day when Green Anoles are active (Edwards, *op. cit.*; Jensen et al., *op. cit.*), which apparently facilitated the lizard's capture in our observation. This is the first report of predation on *A. carolinensis* by *N. domiciliorum* and the first known lizard prey for the spider (G. B. Edwards, pers. comm.).

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ANOLIS NEBULOSUS **(Clouded Anole). PREDATION.** There are 20 lizard species occurring in seasonally tropical dry forest in the vicinity of Chamela, Jalisco, Mexico. Here we report the first predation record of *Anolis nebulosus* by *Sceloporus melanorhinus* at the Chamela Field Station, Universidad Nacional Autónoma de México, Jalisco (19.497867°N, 105.043047°W). This event was recorded at 1500 h on 7 February, 2010 while using video-cameras (SONY Handy Cam DCR-SX43) to identify potential predators of *A. nebulosus* as part of ongoing research. At our study site, individuals of *A. nebulosus* were attached to a tree with a 50 cm string at a perch height of 25 cm from 900 h to 1500 h for three days, every two months. The video (available upon request) shows one adult *S. melanorhinus* approaching, attacking and consuming an adult *A. nebulosus.* This recorded event lasted 28 seconds and revealed that *S. melanorhinus* is not a strict insectivorous lizard and will feed opportunistically on other smaller lizards. *Anolis nebulosus* is approximately half of the body size of *S. melanorhinus* (43mm SVL vs. 96 mm, respectively) and both species are arboreal, diurnal and insectivorous (Garcia and Ceballos 1994. Guía de Campo de los Reptiles y Anfibios de a Costa de Jalisco, México. [Edición en Inglés y Español]. Fundación Ecológica de Cuixmala, A. C. e Instituto de Biología [UNAM], México. 184 pp.). At Chamela, predation of *A. nebulosus* by *Aspidoscelis lineatissima* also has been recorded occasionally (A. Garcia and B. Lister, pers. obs.). Lizard predation and cannibalism is common in insular *Anolis* species (Gerber 1999. *In* Losos and Leal [eds.], *Anolis* Newsletter V, pp. 28–39. Washington University, Saint Louis, Missouri) but previous records of predation by *Sceloporus melanorhinus* have not been reported before.

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ANOLIS SAGREI **(Cuban Brown Anole). AGGRESSIVE BEHAVIOR.** Males of *Anolis sagrei* have a repertoire of aggressive behaviors that they typically use to defend territories, sometimes inflicting considerable injury on an opponent (Henderson and Powell 2009. Natural History of West Indian Reptiles and Amphibians. Univ. Press of Florida, Gainesville. 271 pp.).

From between 1900 and 2000 h on 03 June 2012, I observed three male *A. sagrei* on the road outside of The Island School and Cape Eleuthera Institute on the island of Eleuthera, The Bahamas. One individual (***A***) appeared to be healthy. A second individual (***B***) was dead, but the body was intact showing no obvious physical damage like that which could be caused by vehicular traffic or predatory activity. A third individual (***C***) was alive but relatively immobile and had a severed tail. ***C*** exhibited a dark coloration, which is characteristic of a resident *A. sagrei* in a territorial conflict (Evans 1938. J. Comp. Psychol. 25:97–123). Individual ***A*** was initially positioned next to individual ***B***, but moved several centimeters upon my approach. Once I retreated, ***A*** returned to his position next to ***B***. ***A*** then attacked ***B***, biting and flipping the lifeless body while showing other signs of aggression including tail lashing, a display modifier used during high states of aggressive arousal (Scott 1984. Breviora 479:1–22). When I moved closer to observe the interaction in greater detail, ***A*** moved a short distance toward individual ***C***. When I once again retreated, ***A*** returned and resumed his attack on ***B***. I left and returned ~15 min later, at which time I found ***C*** dead, presumably a result of an attack by ***A***. At this time, ***A*** was once again attacking the body of ***B***. I left the site and returned ~30 min later finding only the lifeless males and a previously unseen female that was walking slowly around the body of ***B***.

Robert Powell and John S. Parmerlee, Jr. reviewed the manuscript and helped edit the images. Sandra D. Buckner and Stacy Lubin-Gray facilitated our fieldwork in the Bahamas and the staff

of the Cape Eleuthera Institute and the Island School was quite tolerant of our antics. The permit to conduct research in the Commonwealth of the Bahamas was issued by Philip S. Weech, Director, The BEST Commission. Protocols were approved by the Avila University Animal Care and Use Committee (IACUC 2007-01). Fieldwork was funded by a grant from the National Science Foundation (USA) to Robert Powell (DBI-0851610).

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***ASPIDOSCELIS GULARIS* (Common Spotted Whiptail). CLUTCH SIZE.** *Aspidoscelis gularis* has a wide distribution from southern Oklahoma to Jalisco and Querétaro, Mexico with several recognized subspecies throughout its distribution (Hammerson et al. 2007. *In* IUCN 2012. IUCN Red List of Threatened Species. Version 2012.1. <www.iucnredlist.org>. Accessed on 19 September 2012). Little information is known regarding the reproduction and litter size of this species in the state of Jalisco. In the state of Querétaro, clutch size has been reported as 1–4 eggs, depending on female body size (Dixon and Lemos Espinal. 2010. Anfibios y Reptiles del Estado de Querétaro, México/Amphibians and Reptiles of the State of Queretaro, Mexico. UNAM, ATM and CONABIO. 428 pp.). In Durango, the reported clutch size is 1–5 eggs (Estrada-Rodríguez et al. 2004. Cañón de Fernández: Anfibios y Reptiles. Instituto de Ecología, A.C. Goméz Palacios, Durango, México. 60 pp.). In Zacatecas, a clutch size of 1–7 eggs has been reported, although based on oviductal eggs rather than actual clutches (Walker 1981. Copeia 1981:850–868).

On 26 October 2009, a litter of 8 hatchlings of *Aspidoscelis gularis* was found on Cerro La Mesa, in the town of Temacapulin, in the municipality of Cañadas de Obregon, Jalisco, Mexico (21.199797°N, 102.708274°W, datum WGS84; elev. 1745 m). The recently hatched lizards were healthy, inactive, and all together under a rock in xerophilic scrub, under direct sunlight, on the side of a dirt road. When the rock was lifted, three of them attempted to escape, but were captured to be photographed. We counted 8 hatchlings and found the 8 corresponding fresh egg shells. We did not find any unhatched eggs or extra shells. The hatchlings were returned under the rock where they were found after some photos were taken. This is the first report of litter size for this species in Jalisco and augments data for the subspecies *A. g. semptemvittata*.

Fig. 1. Eight hatchling *Aspidoscelis gularis* from a single litter found in Jalisco, Mexico.

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***ASPIDOSCELIS LAREDOENSIS* (Laredo Striped Whiptail). GYNANDROMORPH.** We evaluate the identity and reproductive status of a whiptail lizard specimen collected from a site of syntopy between diploid hybrid-derived *Aspidoscelis laredoensis* and this species' maternal progenitor, *A. gularis* (McKinney et al. 1973. Herpetologica 29:361–366; Bickham et al. 1976. Herpetologica 32:395–399; Wright et al. 1983. Herpetologica 39:410–416) situated in México (Walker 1987. Texas J. Sci. 39:313–334). The lizard stands apart in size and color pattern among the >1000 specimens of these species examined by us between 1984–2009 from México and Texas. It was tentatively identified as a hybrid between these species by Walker et al. (1989a. J. Herpetol. 23:119–130). However, genealogical causation (i.e., fertilization of an unreduced diploid egg of *A. laredoensis* clonal complex A by a reduced sperm of *A. gularis*) was selected without appropriate assessment of the other possible bases (i.e., gynandromorphism, senescence, or a variational outlier involving one of these species) for the observed condition of the reproductive organs and external morphology. Fortunately, we have subsequently examined several live/freshly killed male and female putative hybrids of *A. laredoensis* x *A. gularis* that were subjected to confirmational studies of their genealogies based on triploidy as verified by karyotypes (Walker et al. 1989a, *op. cit.*; Walker et al. 1989b. Copeia 1989:1059–1064) and skin histocompatibility experiments (Abuhteba et al. 2000. Can. J. Zool. 78:895–904; Abuhteba et al. 2001. Copeia 2001:262–266). Morphological studies of these hybrids have also revealed the presence of well-defined character states of dorsal and ventral color pattern, scutellation, and meristic variables that differ from the parental species. In this study we use morphological and histological evidence in support of our identification of a gynandromorph of *A. laredoensis* from México deposited in the Arkansas State University Museum of Zoology (ASUMZ).

On 27 May 1985, we collected 11 specimens of *A. laredoensis* just south of the Rio Grande in the Mexican state of Tamaulipas; University of Arkansas Department of Zoology (UADZ 1101) from the vicinity of the northwest suburbs of Reynosa on Mexican Hwy 102 near a hydroelectric complex, and UADZ 1102–1111 (and one *A. gularis*, UADZ 1260) from La Playita situated 8 km NW of Reynosa. Subsequently, UADZ 1111 became ASUMZ 4654 in preparation for this study. It has a SVL of 86.5 mm, head length of 26 mm, head width of 13.5 mm, and body mass (obtained before preservation) of 13.5 g. It is much larger than any of the other adults of *A. laredoensis* (mean SVL 69.9 ± 0.89, range 66–76 mm, N = 10) collected on the same date at the two sites in Tamaulipas. The SVL and mass of ASUMZ 4654 are 13.2% and 33.3% larger, respectively, than observed in any other individual of *A. laredoensis* from the sites. Based on the size of the lizard, we initially hypothesized that it was an *A. laredoensis* x *A. gularis* hybrid; however, we now know that such lizards have discrete morphological markers not present in ASUMZ 4654. The slightly to moderately enlarged postantebrachial scales (Fig. 1A) of the specimen places it within the range of variation for this character present in the 10 contemporary *A. laredoensis* (slightly to moderately enlarged) rather than that of *A. gularis* (enlarged and plate-like), or a character state intermediate between the two species. In addition, scores for meristic characters in ASUMZ 4654 (first number) are also within the ranges of variation for the other specimens of *A. laredoensis* from the sites (mean, range, N): granular scales around midbody, 91 (90.4 ± 0.67, 89–94, N = 9); granular scales from occiput to base of tail, 227 (225.2 ± 0.22, 222–229, N = 9), granular scales between the paravertebral stripes, 14 (11.1 ± 0.48, 9–14, N = 9); right and left femoral pores summed, 33 (34.1 ± 0.31, 31–35, N = 10); and right and left circumorbital scale series summed, 12 (10.3 ± 0.33, 9–12, N = 10).

Based on SET field notes made shortly after collection, and prior to preservation, ASUMZ 4654 possessed color attributes that we subsequently learned should have precluded identification of it to either *A. gularis* or *A. laredoensis* x *A. gularis*, the overall resemblance being that of an unusually old individual of *A. laredoensis* that had progressed to an extreme color pattern ensemble. Included was a blue face, blue-green dorsal surface of head, and light blue throat and mesoptychium, with no evidence of pink or red hues typical of either *A. gularis* or all known adult hybrids between the two species. The dorsal pattern in ASUMZ 4654 consisted of three pairs of moderately (lateral) to well-defined (dorsolateral and paravertebral) primary stripes and a single vertebral (traits of *A. laredoensis*; Fig. 1B). In life, the green-hued stripes were positioned between brown-black fields suffused with green flecks; the stripes ended near the tail. Using the left side of the body for analysis, we noted sixteen partial to complete gray-green-tan vertical bars in the lower lateral field, 22 rounded spots of the same blend of colors in the upper lateral field, and a series of three similarly colored spots in the

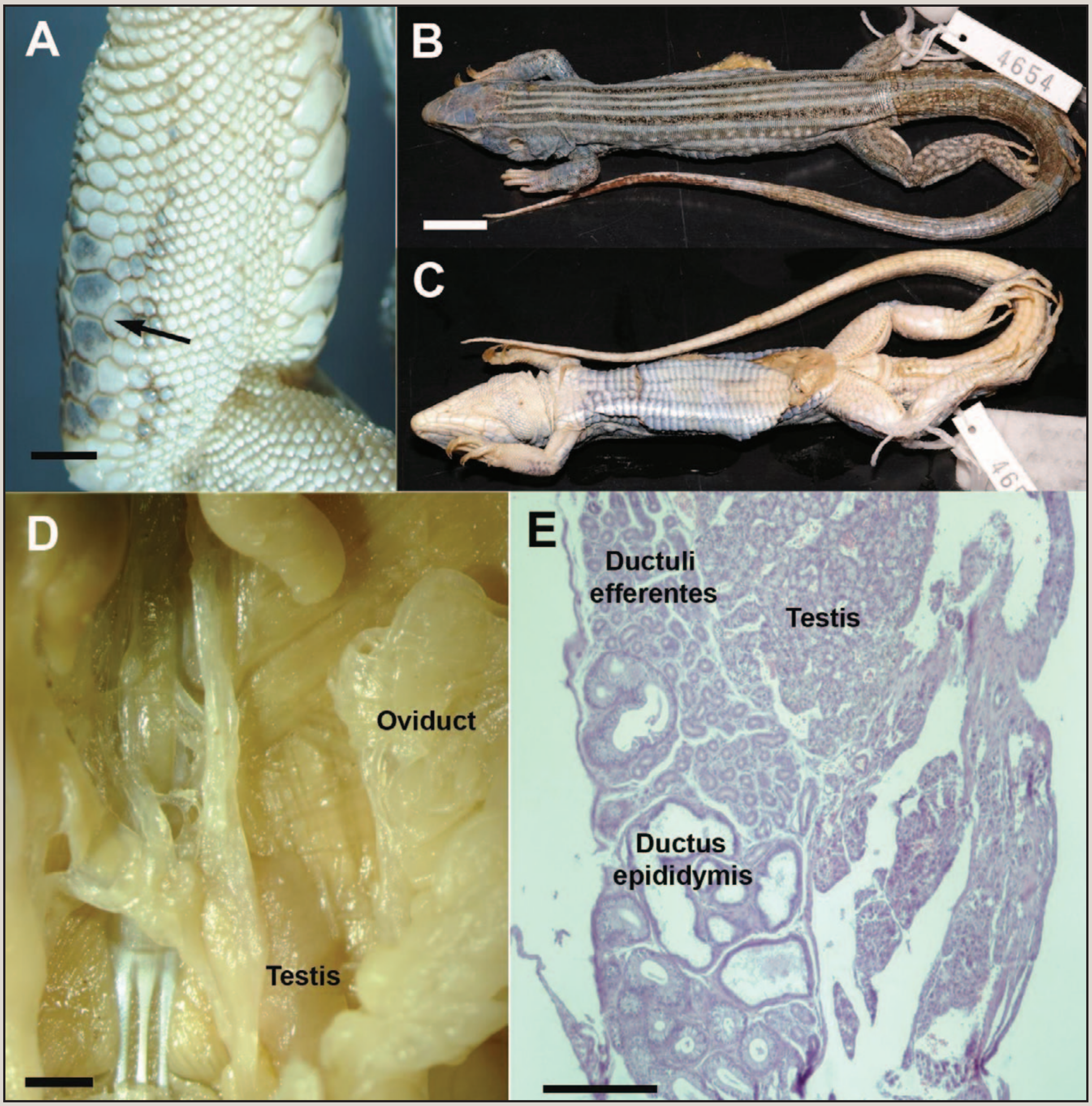

Fig. 1. Morphological characteristics of a gynandromorph of *Aspidoscelis laredoensis* (ASUMZ 4654) collected from La Playita, Tamaulipas, México. A) Postantebrachial scales (arrow) of right antebrachium; line = 1 mm. B) Dorsal coloration and pattern; line = 10 mm for B and C. C) Ventral coloration. D) Left gonadal structures; line = 1 mm. E) Longitudinal histosection of left testis and ductus epididymis; line = 200 μm.

dorsolateral field near the tail. Some of the spots and bars of the upper and lower lateral fields, respectively, were fused to or superimposed upon the lateral stripes (Fig. 1B). The tail was blue laterally and olive dorsally. The upper parts of forelimbs were hues of green and the forearms were shades of blue, both areas with indistinct gray-white marking. The hindlimbs were olive dorsally, and shades of blue elsewhere, with gray-white markings. The thoracic and abdominal scales were sky blue, some with darker edges. The ventral surfaces of the limbs and tail were a mixture of blue and cream-white (Fig. 1C).

We used a standard histological protocol to prepare reproductive tissues for light microscopy. Gonadal tissues were dehydrated in a graded series of ethanol, cleared in xylene, embedded in paraffin, sectioned with a rotary microtome into 10 µm sections, stained with Harris hematoxylin and counterstained with eosin. We designated this lizard to be a gynandromorph due to the presence of an abnormal sexual anatomy characteristic of both sexes. No ovaries were observed; however, paired Müllerian ducts (oviducts) of moderate development were positioned lateral to small (< 5 mm in length), paired rudimentary gonads (Fig. 1D). These gonadal structures appeared slightly orange in coloration upon gross inspection. Histological examination of the left gonadal mass (Fig.1E) revealed a differentiated ovoid testicular mass immediately adjacent to numerous mesonephric derivatives including efferent ductules of the ductuli efferentes and a ductus epididymis with ductules of variable size and epithelial height. Adrenal tissue was aggregated along the cauda of the epididymis (Fig. 1E). The testicular mass, enveloped by a thin connective tissue tunic, was organized into tightly packed medullary cords (Fig. 1E) that appeared to be precursors to seminiferous tubules. These cords averaged 35.3 µm in diameter (range, 31.6–43.3 µm; N = 10). The germ cells of the cords did not appear to be mitotic. The cytoplasm of the germ cells of the cords was slightly basophilic throughout the testicular mass. Numerous blood vessels were interspersed among these presumptive seminiferous tubules, and the tubules generally lacked lumina. Numerous spherical efferent ductules were dispersed along the entire medial margin of the testicular mass. Those ductules adjacent to the caudal region of the testicular mass (Fig. 1E) averaged 40.2 µm in diameter (range, 33.3–48.3 µm; N = 10). The low simple columnar epithelia of these ductules exhibited stereocilia, and the apical cytoplasms of these cells were slightly acidophilic.

The cauda portion of the epididymis was more developed than either the caput or the corpus, which were poorly organized. The anteriormost mesonephric ductules of the cauda exhibited simple columnar epithelia that averaged 27.3 µm in height (range 20.0–36.0 µm; N = 10). The epididymal duct within the cauda exhibited irregular, greatly-expanded segments (Fig. 1E). These hypertrophied ductal tubules exhibited a low simple columnar epithelium (Fig. 1E) with the epithelial cell layer averaging 11.5 µm in height (range 9.8–14.6 µm; N = 10) in height. The epithelial cells also exhibited conspicuous stereocilia averaging 12.6 µm in height (range 10.3–14.6 µm; N = 10). Finally, acidophilic cellular debris was observed in epididymal ductules leading to the ductus deferens.

This is only the second publication known to us in which terminology specifically in reference to gynandromorphism has been employed to describe the reproductive organs in a specimen of a whiptail lizard species. Mitchell and Fouquette (1978. Copeia 1978:156–159) described an adult (Arizona State University 15323; 67 mm SVL) of *Cnemidophorus inornatus arizonae* (= *Aspidoscelis inornata arizonae* sensu Reeder et al. 2002. Am. Mus. Novit. 3365:1–61) collected 10 July 1975 from 7 km SE of Willcox, Cochise Co., Arizona, with male reproductive organs in the left side of the body cavity and female organs in the right side of the cavity. These authors, albeit based on morphology, explicitly rejected the hypothesis that the specimen in question was a tetraploid hybrid involving triploid *A. uniparens* which was also present at the Arizona site. More recently, Cole et al. (2010. Am. Mus. Novit. 3698:1–43) chose to use the terminology "apparently female (but intersex) laboratory hybrid" to describe a genetically confirmed allodiploid individual (American Museum of Natural History 153158; 81 mm SVL) of *A. inornata arizonae* () x *A. tigris marmorata* ().

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***BRACHYLOPHUS BULABULA* (Fiji Banded Iguana). PREDATION.** Documented predation of any South Pacific iguana is rare, as all three species remain very uncommon and restricted in range. Two previous studies have reported food habits of wild Pacific Boas (*Candoia bibroni*), and neither found evidence of these boas preying on *Brachylophus* (McDowell 1979. J. Herpetol. 13:1–92; Harlow and Shine 1992. J. Herpetol. 26:60–66). One

Fig. 1. *Candoia bibroni* preying on *Brachylophus bulabula* on Wakaya Island, Fiji.

second-hand account (Gibbons and Watkins 1982. *In* Burghardt and Rand [eds.], Iguanas of the World, pp. 418–441. Noyes Publ., Park Ridge, New Jersey) reported that a *B. fasciatus* was observed being eaten by a *C. bibroni* on Vanuabalavu Island in Fiji. We report here a verified observation of predation on *B. bulabula* by a *C. bibroni* (Fig. 1.) on Wakaya Island in Fiji (17.60°S, 179.00°E) from 17 October 2008. The predation event involved an adult *B. bulabula*, being consumed by an adult *C. bibroni*. Adult *B. bulabula* weigh approximately 125 g (RNF, unpubl. data), making this iguana a significantly larger prey item than skinks and geckos, which are reported to constitute most of the diet for *C. bibroni* (McDowell, *op. cit.*; Harlow and Shine, *op. cit.*).

Candoia and *Brachylophus* are known to co-occur on many islands in Fiji (Fisher and Harlow, unpubl. data), although the island with the highest known density of *Brachylophus* iguanas apparently lacks *Candoia* (Harlow and Biciloa 2001. Biol. Conserv. 98:223–231). It is possible there is a previously undocumented top down effect of these snakes on iguanas when they co-occur on small islands.

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CROTAPHYTUS COLLARIS COLLARIS **(Eastern Collared Lizard). FRUGIVORY.** Lizards of the genus *Crotaphtyus* are commonly viewed as being strictly carnivorous, feeding mainly on insects and occasionally on small vertebrates (McGuire 1996. Bull. Carnegie Mus. Nat. Hist. 32:1–143). However, in May 2011, one of us (JJC) observed an individual *Crotaphytus collaris* ingesting *Morus* sp. fruit. The observation was made during a two-year study of the behavioral ecology of *C. collaris collaris* in the Smoky Hills region of central Kansas, USA. The individual was an adult male, perched within a ~1 m *Morus* sp. tree. Our observation constitutes the first documentation of frugivory in *C. collaris* in the northeastern portion of its range, as well as the first documentation of any crotaphytid ingesting *Morus* sp. fruit. Literature discussing the diet of crotaphytid lizards reference occasional herbivory (Best and Pfaffenberger 1987. Southwest. Nat. 32:415–426; Blair and Blair 1941. Am. Midl. Nat. 26:230–232; Ellis and Henderson 1913. Univ. Colorado Stud. 10:39–129; Fitch 1956. Univ. Kansas Publ. Mus. Nat. Hist. 8:213–272), and frugivory is noted specifically in three reports (Banta 1960. Wasmann J. Biol. 18:309–311; Montanucci 1971. Herpetologica 18:183–197; Turner et al. 1969. Herpetologica 25:247–257). These reports note ingestion of *Lycium* sp. fruit by *C. bicinctores* (as *C. collaris baileyi*) in southern Nevada (Banta 1960, *op. cit.*), *C. reticulatus* in southern Texas and northern Mexico (Montanucci 1971, *op. cit.*) and *Gambelia wislizenii* (as *C. wislizenii*) in southern Nevada (Turner 1969, *op. cit.*). Collectively, these observations suggest fruit might be a standard dietary component of crotaphytid lizards throughout their geographic range, despite the traditional view of crotaphytids as strictly carnivorous.

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DRACO QUINQUEFASCIATUS **(Five-banded Gliding Lizard). REPRODUCTION.** *Draco quinquefasciatus* inhabits lowland rainforest particularly in peat swamp forest. It forages on tree trunks looking for ants, termites and small insects. This gliding lizard is widely distributed from Trang in southern Thailand to Peninsular Malaysia, Sumatra and Borneo (Cox et al. 1998. A Photographic Guide to Snakes and other Reptiles of Peninsular Malaysia, Singapore and Thailand. New Holland Publishers, UK. 144 pp.). The total length of this species is up to 27 cm and the female can lay up four eggs per clutch (Cox et al. 1998, *op. cit.*). A clutch of two eggs (measuring 16.8 and 17.2 mm) were reported as obtained from the buttress leaf litter within a dipterocarp forest (Das 2007. A Pocket Guide of Amphibians and Reptiles of Brunei. Natural History Publications [Borneo], Kota Kinabalu, Sabah. 200 pp.). Here I report on a maximum clutch size for *D. quinquefasciatus*.

On 11 February 2011, between 2100 and 2200 h, an adult female *D. quinquefasciatus* was caught at Sungai Sedim (5.250574°N, 100.465147°E; elev. < 200 m), Kedah, Malaysia. This specimen was captured while perching on a tree trunk (ca. 3–4 m above ground). For further inspection, the lizard was euthanized and dissected and four whitish eggs in the uterus were found. The oval-shaped eggs were measured and the mean ± SD (range, N) length, diameter and weight of the eggs were 14.5 ± 0.58 mm (14–15, 4), 7.5 ± 0.58 mm (7–8, 4) and 601 ± 13.6 mg (587–615, 4), respectively. Later the specimen (11USM-SDM-DQ01) was fixed with 10% formalin, stored in 70% ethanol and deposited at School of Pharmacy, Universiti Sains Malaysia for reference.

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ENYALIUS BRASILIENSIS. **DEATH-FEIGNING.** *Enyalius brasiliensis* is an Atlantic forest species of Brazil, inhabiting areas with humid vegetation and closed canopies (Jackson 1978. Arq. Zoo. 30:1–79). Almost nothing is known about the ecology of the genus *Enyalius* and information available is restricted to accounts of feeding habits and microhabitat use (Jackson, *op. cit.*; Sousa et al. 2008. Iheringia Sér. Zool. 98:260265; Van Sluys et al. 2004. Braz. J. Biol. 64:353–356; Vanzolini 1972. Pap. Avulsos Zool.

FIG. 1. Death-feigning posture in a female *Enyalius brasiliensis*.

26:83–115; Vitt et al. 1996. Herpetol. Nat. Hist. 4:77–82; Zamprogno et al. 2001. Rev. Bras. Biol. 61:91–94). Little information is published on behavioral aspects of this species.

Death-feigning, also known as tonic immobility or thanatosis, is an innate, anti-predator behavior. In squamates, death-feigning is a widespread defensive tactic that is described from several different families, such as Anelytropsidae (Torres-Cervantes et al. 2004. Herpetol. Rev. 35:384), Crotaphytidae (Gluesing 1983. Copeia 1983:835–837), Scincidae (Langkilde et al. 2003. Herpetol. J. 13:141–148), and Tropiduridae (Bertoluci et al. 2006. Herpetol. Rev. 37:472–473; Machado et al. 2007. S. Am. J. Herpetol. 2:136–140). Herein we provide observations on death-feigning in *Enyalius brasiliensis* with a brief description of the behavior in this lizard.

We collected two *E. brasiliensis* specimens during the inspection of a drift fence with pitfall and funnel traps used for a reptile survey conducting inventory of the area sampled. Both lizards exhibited death-feigning when removed from the traps and when manipulated in the laboratory to perform marking procedures and/or morphometric analysis. On 29 September 2008 we collected a male *Enyalius brasiliensis* (SVL: 74.7 mm), and on 31 October 2009 we collected a female of *E. brasiliensis* (SVL: 102.3 mm) in fragmented forest of Atlantic Rainforest in the Floresta Farm (21.742667°S, 43.29225°W, WGS 84; ca. 709 m elev.), in the municipality of Juiz de Fora, State of Minas Gerais, Brazil. The lizards became immobile, lying belly-up, crossing the limbs over the stomach and typically closing the eyelids. The death-feigning posture persisted even after the animal was gently placed upside down on the ground (Fig. 1). An individual would recover after 15–30 min and then attempt to flee. Both specimens were deposited in the Coleção Herpetológica da Universidade Federal de Juiz de Fora (CHUFJF 586, 591). We believe these observations to be the first records of death-feigning in this lizard species..

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***HELODERMA SUSPECTUM* (Gila Monster). FEMALE REPRODUCTIVE ANATOMY.** Variation in gross uterine morphology is well defined in mammals (i.e., Kobayashi and Behringer 2003. Nature Rev. Genet. 4:969–980), and has been included in comparative anatomy textbooks for decades. In placental mammals the uterus has been described as duplex, bicornuate, bipartite, or simplex (Koayashi and Behringer 2003 *op. cit.*). However, until recently (e.g., Siegel et al. 2011a. J. Anat. 218:342–348; Siegel et al. 2011b. Acta Zool. 93:400–408), little attention has been paid to the variation in female reproductive anatomy of reptiles, and even this recent literature failed to describe multiple "types" of uteri similar to those described in mammals. From Gadow (1887. Phil. Trans. R. Soc. Lond. B. 178:5–37) and Gabe and Saint-Girons (1965. Mem. Mus. Nat. Hist. XXXIII:149–332), all lepidosaurs, testudines, and crocodylians possess paired uteri that empty into the cloaca separately. Thus, it would appear that all non-mammalian amniotes possess uterine morphology that is most similar to the "duplex" condition described for some mammals; although Gadow (1887, *op. cit.*) does mention the possible fusion of uteri in a lizard of the genus *Lophura* (no species provided), which we can only assume is a synonym for *Hydrosaurus* (sailfin lizards).

In a broad survey of squamate urogenital tracts, in-depth literature review, and histological preparation of cloacal/oviducal junctions from hundreds of squamate individuals (Siegel et al. 2011a, *op. cit.*; Siegel et al. 2011b, *op. cit.*), we found the dogma of non-mammalian amniotes possessing only duplex-like uteri to be correct in all but one species: *Heloderma suspectum* (Gila Monster). Tissues from the cloacal/oviducal junction of two preserved *H. suspectum* specimens were obtained from the Sam Noble Oklahoma Museum of Natural History (#020151 and #32499). Tissues were dehydrated with ascending concentrations of ethanol, cleared in toluene, embedded in paraplast, serially sectioned at 10 µm, affixed to albumenized slides, and stained with hematoxylin and eosin for general histological examination.

At the cranial aspect of the cloaca, paired uteri can be observed traveling dorsal to the urodaeal chamber (Fig. 1A). As the

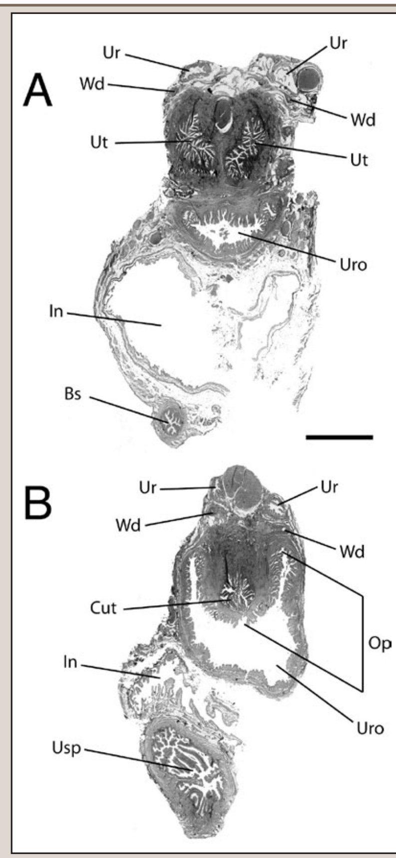

Fig. 1. Cross sections from the cloacal/oviducal junction of female *Heloderma suspectum* (hematoxyline and eosin; scale bar = 2,800 µm). Please see Siegel et al. (2011c. Reproductive Biology and Phylogeny of Snakes. CRC Press, Boca Raton. 759 pp.) for a review of cloacal anatomy and terminology in squamates. **A.** Paired uteri residing dorsal to the cranial aspect of the urodaeum. **B.** A common uterus resulting from the union of the paired uteri. Bs, bladder stalk; Cut, common uterus; In, intestine; Op, oviducal papilla; Ur, ureter; Uro, urodaeum; Usp, urodaeal sphincter; Ut, uterus; Wd, Wolffian duct.

uteri persist caudally, the urodaeal chamber enlarges (Fig. 1B). Paired uteri then invade the enlarged urodaeal chamber and unite forming a single large oviducal papilla (Fig. 1B). At this level the lamina propria of each uterus merges with that of the urodaeum. Immediately caudal to the uterine-cloaca junction, the epithelia of each uterus join and create a common uterine opening into the urodaeum at the most caudal aspect of the uterus (Fig. 1B). The union of the uteri occurs at the posterior, non-glandular portion of the uterus (region 2, see Siegel et al. 2011c. Reproductive Biology and Phylogeny of Snakes. CRC Press, Boca Raton. 759 pp.). Thus, female *Heloderma suspectum* possess a bipartite-like uterus.

The basal lineage of Lepidosauria (i.e., *Sphenodon*; Meyer and Zardoya 2003. Annu. Rev. Ecol. Evol. Syst. 34:311–388) possesses a duplex-like uterus (Gabe and Saint-Girons 1965, *op. cit.*). Because no mammalian amniote possesses a cloacal/oviducal junction (i.e., these taxa have a vaginal/oviducal junction instead) besides the basal Monotremata (Meyer and Zardoya 2003, *op. cit.*), and monotrematan taxa do not possess bipartite uteri (Kobayashi and Behringer 2003, *op. cit.*), the bipartite-like uterus in a non-basal lineage of Lepidosauria is secondarily derived. We make no hypothesis of similar function between the bipartite-like uterus of *Heloderma suspectum* and the bipartite uterus of mammals, but suggest that the bipartite-like uterus is a convergent characteristic. Female specimens of *Hydrosaurus* (see Gadow 1887, *op. cit.*) should be examined to elucidate the possibility of a similar bi-partite uterus in another lineage of lizards (e.g., Agamidae).

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HEMIDACTYLUS BRASILIANUS **(Amaral's Brazilian Gecko). DIET.** *Hemidactylus brasilianus* is nocturnal with terrestrial/arboreal habits (Rodrigues 2003. *In* Ecologia e Conservação da Caatinga, pp. 181–236. Editora Universitária da UFPE, Recife, Pernambuco; Vanzolini et al. 1980. Répteis das Caatingas. Acad. Bras. de Ciênc., Rio de Janeiro, Brazil. 161 pp.). Few studies have been conducted on the diet of *H. brasilianus* (Rocha and Rodrigues 2005. Pap. Avul. Zool. 45:261–284). Thus, the aim of the present study was to assess the food composition of *H. brasilianus* in a caatinga region of the San Francisco Valley, northeastern Brazil.

Collections were conducted from 19 September to 5 November, 2011 during a herpetology course in an area of bushy caatinga (9.3280°S, 40.5497°W; elev. 385 m) on the Agrarian Sciences Campus of the Universidade Federal do Vale do São Francisco – UNIVASF, Petrolina, Pernambuco, Brazil. Lizards were captured in pitfalls (7-liter buckets). In the lab, individuals were euthanized with an injection of xylocaine diluted in water. Stomach contents were analyzed under stereomicroscope to identify the food items ingested, most taxa to order level. Larval stages of the orders Lepidoptera and Coleoptera were assigned to the same prey category (insect larvae) because they represent a single morphotype.

Diet was analyzed from numerical (occurrence and numerical frequencies of ingested items) and volumetric data. The volume (V) of food items was estimated using the modified version of the spheroid formula: $V = 4/3\varpi\ (\text{width}/2)^2 \times (\text{length}/2)$, following Vitt et al. (1996. J. Trop. Ecol. 12:81–101). To calculate food niche breadth from numerical proportions and remove the effect of the number of prey categories consumed, we used standardized values of Simpson's Diversity Index in the equation of Levin's Standardized Index, as follows: $B_a = B - 1/n - 1$, where B is Simpson's niche breadth index, and n the number of prey categories used. Values in this case range from 0 (exclusive use of a single prey category) to 1 (equal use of all prey categories) (Kenney and Krebs 2000. Programs for Ecological Methodology. Version 5.2. Vancouver, Canada. University of British Columbia). Moreover, the importance value index (IVI) was calculated to determine the proportion of each diet item, adding occurrence, numerical and volumetric percentages, and dividing by three ($IVI=F\%+N\%+V\%/3$) (Mesquita et al. 2006. Copeia 2006:460–471). Grouped stomach contents, and separating males and females, were considered in this analysis. The Mann-Whitney U test was applied to determine possible differences in snout-vent length between males and females.

A total of 11 individuals were collected, seven males, three females and one whose sex was not identified. The SVL of males (35.1 ± 6.5 mm) did not differ significantly from that of females (42.4 ± 6.3 mm) (Mann-Whitney U test, Z = -1. 481, P = 0. 138). With respect to diet, five categories of consumed prey were recorded for *H. brasilianus* (Table 1). The highest occurrence frequencies were registered for insect larvae (45.5%) and Blattaria (36.4%), but numerically, termites (Isoptera) were the most important items (52.6%). Despite the considerable consumption of Isoptera, in terms of volume, Blattaria was the most important food item consumed (34.4%) (Table 1).

The largest importance index value was recorded for insect larvae (33.4), followed by Isoptera. Considering sex, we found an absence of Isoptera in the diet of *H. brasilianus* males and a high importance index for insect larvae (48.3). For females, the highest importance index values were for Isoptera (66.2) and insect larvae (19.6); however, it is important to underscore that only one female consumed a large amount of termites, skewing the importance value for this category.

Prey categories consumed show that *H. brasilianus* predominantly captures nocturnal prey (cockroaches and crickets), with little mobility (insect larvae) and unpredictable, aggregate distribution (termites). Insect larvae, represented by the highest IVIs (total, for males, and second for females), were also important items in the diet of *H. brasilianus* in a dune field belonging to the Caatinga of Bahia state (Rocha and Rodrigues, *op. cit.*). We believe that this marked consumption of insect larvae is associated with their wider availability in the study area. However,

TABLE 1. Diet composition of *Hemidactylus brasilianus* at Campus Ciências Agrárias, Petrolina municipality, Pernambuco, Brazil, from September to November 2011. F = frequency of occurrence, N = number, V = volume (mm^3), IVI = importance value index (t = total sample, m = males, f = females).

Prey category	F (%)	N (%)	V (%)	IVIt	IVIm	IVIf
Blattaria	4 (36.4)	4 (10.5)	360.8 (34.4)	27.1	36.9	14.2
Coleoptera	1 (9.1)	1 (12.6)	67.0 (6.4)	6.0	10.2	–
Isoptera	1 (9.1)	20 (52.6)	209.3 (20.0)	27.2	–	66.2
Insect larvae	5 (45.5)	10 (26.3)	296.7 (28.4)	33.4	48.3	19.6
Orthoptera	3 (27.3)	3 (8.0)	112.5 (10.8)	15.4	18.9	–
TOTAL		38	1,046.3			

the food niche breadth of *H. brasilianus* (0.437) reveals moderate diet specialization, and despite the small number of prey types, food resource exploitation is relatively equitable. In addition, these findings are correlated with behavioral characteristics of *H. brasilianus*, such as its nocturnal habits and arboreal lifestyle, with only sporadic activity at ground level.

The *H. brasilianus* specimens (CCA 007, 013, 018, 022, 025, 028, 029, 033, 055, 057 and 058) were deposited in the Herpetological Collection of the Caatinga Fauna Museum at CEMAFAUNA-CAATINGA (Centro de Conservação e Manejo de Fauna da Caatinga). We thank the CEMAFAUNA-CAATINGA for logistical support and the Chico Mendes Institute for Biodiversity Conservation (ICMBio) for issuing the collection license (n° 29558-1).

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***LEPIDODACTYLUS LUGUBRIS* (Mourning Gecko). REPRODUCTION.** *Lepidodactylus lugubris* occurs in most parts of Oceania and has been introduced into parts of Asia and North, Central and South America (Kraus 2009. Alien Reptiles and Amphibians A Scientific Compendium and Analysis. Springer Science. 563 pp.). It is an all-female parthenogenetic species that originated due to hybridization (Yamashiro et al. 2000. Zool. Sci. 17:1013–1020). However, males, which are generally considered to be the consequences of crosses between *L. lugubris* females and males of congeneric bisexual species, are occasionally found (Röll et al. 2008. Zoology 111:385–400) and have been reported from Hawaii and the Ryukyu Archipelago (Brown and Murphy-Walker 1996. Herpetol. J. 6:69–73; Yamashiro and Ota 1998. Jpn. J. Herpetol. 17:152–155). The purpose of this note is to report a second phenotypic male *L. lugubris* from Hawaii, USA.

One male *L. lugubris* (SVL = 48 mm), collected 12–15 August 1998, at Hilo, district of South Hilo, Hawaii, Hawaii USA, and deposited in the herpetology collection of the Natural History Museum of Los Angeles County, Los Angeles, California, USA as LACM 145408, was examined. The testes were removed, embedded in paraffin, sections were cut at 5µm and mounted on glass slides, and stained with hematoxylin followed by eosin counterstain.

The testes of our male *L. lugubris* contained seminiferous tubules of normal morphology (Fig. 1), and contained mainly Sertoli cells, spermatogonia, primary spermatocytes, spermatids and clusters of abnormal sperm, which lacked tails (Fig. 2). Because the spermatozoa lacked tails, we conclude this male was infertile. The histology was similar to that of a phenotypic male *L. lugubris* reported by Röll et al., *op.cit.* The prevalence of male phenotypes in our *L. lugubris* sample from Hilo, Hawaii was 1/20 (5%). This is the second record of a phenotypic male *L. lugubris* from Hilo, Hawaii. In another examination, one of seven (14%) *L. lugubris* collected in May 1986 was also a phenotypic male (Brown and Murphy-Walker op. cit.). Currently, no other *Lepidodactylus* species is known to occur in Hawaii, so these findings tend to suggest that sterile males do occur at very low prevalences in wild populations of *L. lugubris* from Hawaii. Histology slides were deposited in LACM.

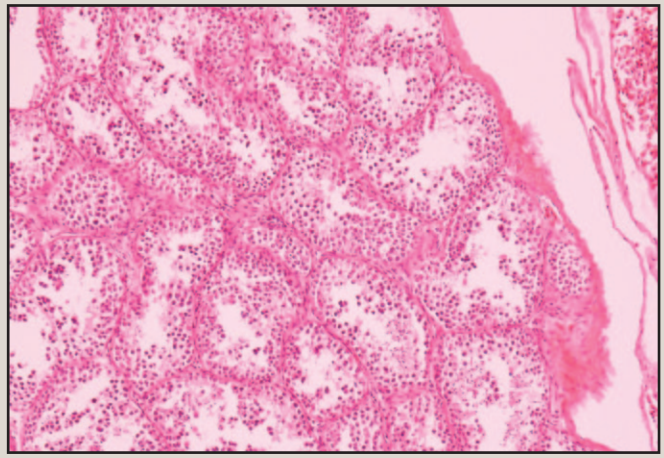

Fig. 1. Seminiferous tubules of the male *Lepidodactylus lugubris* (LACM 145408) described herein. 100x.

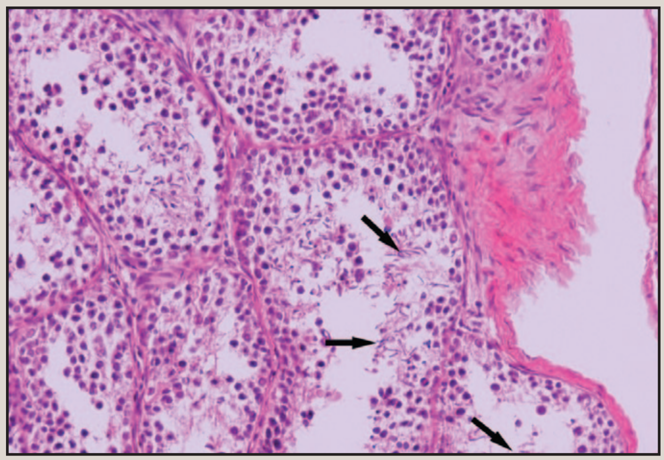

Fig. 2. Seminiferous tubules of the male *Lepidodactylus lugubris* (LACM 145408) described herein. Note the clusters of sperm (arrows) 200x.

We thank G. Pauly (LACM) for permission to examine *L. lugubris*.

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***LIOLAEMUS KOSLOWSKYI*. SCOLIOSIS AND KYPHOSIS.** Scoliosis and kyphosis have been recorded in captive lizards (Otero Llende and Bengoa Rodríguez 2001. Res. VII Cong. Anual Soc. Española Med. Veterinaria 1:24–30), but infrequently reported in wild populations of lizards (Chavez-Cisneros and Lazcano 2012. Herpetol. Rev. 42:140; Frutos et al. 2006. Herpetol. Rev. 37:468–469; Mitchell and Georgel 2005. Herpetol. Rev. 36:183–184; Norval et al. 2010, Herpetol. Rev. 41:224–225). Here we provide the first report of scoliosis and kyphosis in *Liolaemus koslowskyi*, a small liolaemid lizard of western Argentina.

On 10 February 2012, we caught an adult female *Liolaemus koslowskyi* (42 mm SVL) on the roadside of Ruta Nacional 40, Cuesta de Miranda, 3.5 km W Bordo Atravesado, near Los

Fig. 1. Adult female *Liolaemus koslowskyi* showing multiple kyphosis and scoliosis.

Fig. 2. X-ray images of adult female *Liolaemus koslowskyi*, lateral (left) and dorsal (right) views.

Tambillos, 2 km NE El Siciliano, Departamento Felipe Varela, La Rioja Province (34.41500°S, 68.80727°W, WGS84; 1664 m elev.). She exhibited two vertical curvatures on the spine (kyphosis), one behind the head in the pectoral girdle and one over the pelvic girdle. In addition, the tail had nine alternating lateral curves (scoliosis) (Figs. 1, 2). This lizard appeared to experience no obvious limitations in mobility. Apparently, these malformations do not appear to decrease the probability of survival of the lizard (Frutos et al., *op. cit.*). To our knowledge, this is the first reported occurrence of these conditions in *Liolaemus koslowskyi* in natural conditions. Voucher specimen (LJAMM 14800) was deposited in the herpetological collection LJAMM-CNP of the Centro Nacional Patagónico (CENPAT-CONICET), Puerto Madryn, Argentina.

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***OPHIODES STRIATUS* (Glass-lizard). MINIMUM BODY MASS FOR NEONATES.** *Ophiodes striatus* is an anguid lizard with a cylindrical and elongate body, lacking front limbs, but expressing vestigial hind limbs and is viviparous (Cunha 1961. Bol. Mus. Para. Emilio. Goeldi. Cienc. Nat. 39:1–189). This species is widely distributed, occurring from the montane areas of southeastern and central Brazil, the Cerrado biome and altitude camps in the Atlantic Forest and Araucaria Forest (Barbosa et al. 1991. Rev. Bras. Biol 51:285–287).

On 3 December 2011 an adult female *O. striatus* (CRLZ 000329; body mass = 15.50 g; snout–vent length [SVL] = 18.35 cm; total length [TL] = 29.98 cm) was collected from the Reserva Biológica Unilavras Boqueirão (RBUB) (21.34638°S, 44.99083°W, 1250 m elev.; datum WGS84) in riparian forest associated with phytophysiognomies of Cerrado. The specimen was placed in a terrarium with sandy soil, water, rocks, and natural vegetation obtained at the collection site. Two days later on 5 December 2011, this female gave birth to four young, for which body mass, SVL, and TL were measured. They were then euthanized and fixed in 10% formalin and preserved in 70% alcohol, labeled and deposited in CRLZ. Mean body size of offspring was obtained (body mass = 0.64 ± 0.05 g; SVL = 5.43 cm ± 0.09; TL = 12.80 cm ± 0.20). Prior to this report, morphometric data and body mass of *O. striatus* neonates have not been described. Only data regarding young still within the uterus of females necropsied have been provided until now (Barbosa et al., *op. cit.*; Barros e Teixeira 2007. Bol. Mus. Mello Leitão 22:11–23; Leitão 1973. Iheringia 42:34–39). This study is the first report of minimum body mass for neonates of *Ophiodes striatus*.

This work was licensed by IBAMA (Process n° 14740-1).

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***OPHIODES STRIATUS* (Striped Worm Lizard). BIFURCATED TAIL.** Many morphological malformations have been reported on duplication (i.e., bifurcation; trifurcation) of the regenerated portion of the tail in lizards capable of caudal autotomy (see Chan et al. 1984. Hawaii Volcanoes National Park: Proceedings of the Fifth Conference of National Science, pp. 41–50; Chandra and Mukherjee 1980. J. Bombay Nat. Hist. Soc. 77:343; Gogliath et al. 2012. Herpetol. Rev. 43:129; Kumbar and Ghadage 2011. Herpetol. Rev. 42:94; Mata-Silva et al. 2010. Herpetol. Rev. 41:352–353). Generally this duplication is caused by regeneration failure of the tail rather than congenital malformations (Lynn 1950. Herpetologica. 6:81–84).

Fig. 1. Photograph showing a female *Ophiodes striatus* and bifurcated tail. Note the different design pattern of the regenerated tails in relation to the body.

On 9 June 2011, an adult female *Ophiodes striatus* was found on the campus of Juiz de Fora Federal University, in the municipality of Juiz de Fora, Minas Gerais, Brazil (21.773698°S, 43.368405°W, WGS84; 857 m elev.) with an unusual double tail (Fig. 1). It weighed 24.7 g and measured 111.50 mm (SVL). The main tail measured 90.41 mm and the bifurcated portion measured 48.94 mm. Most lizard species can regenerate broken tails, but the regenerated part usually differs in shape and color from the original tail; this specimen expressed a uniformly colored tail, lacking the striped pattern of the body. The presence of double tails does not seem to have affected the lizard's welfare.
The specimen was deposited in the herpetology collection the of Juiz de For a Federal University (CHUFJF 922). We thank the Brazilian environmental agency, IBAMA, for issuing the collection permit (16895-1).

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***OPHISAURUS COMPRESSUS* (Island Glass Lizard). SWIMMING.** *Ophisaurus compressus* is a legless anguid native to the southeastern United States (Holman 1971. Cat. Amer. Amph. Rept. 113:1–2). The habitat of this species is described as pinelands (Duellman and Schwartz 1958. Bull. Florida State Mus. 3:181–324) and rosemary-palmetto scrub (Telford 1959. Copeia 1959:100–119), although Neill (1948. Herpetologica 4:153–158) found them under tidal wrack on sandy beaches. As its common name suggests, *O. compressus* is often found on offshore barrier islands, but over-water dispersal by any species of *Ophisaurus* is undocumented.

At 1253 h on 29 March 2012 while kayaking, we encountered an adult *O. compressus* in the Intracoastal Waterway in Flagler Co., Florida, USA (29.621958°N, 81.210497°W, datum WGS 84). This section of the Intracoastal Waterway is within the Guana Tolomato Matanzas National Estuarine Research Reserve (GTMNERR), and contains numerous spoil islands that extend parallel to the waterway for approximately 1.75 km. Upon capture, this *O. compressus* (SVL = 176 mm, tail length = 417 mm) was swimming west towards the nearest spoil island (~ 87 m away) and was approximately 125 m from the mainland.
To our knowledge, this observation provides the first direct evidence for over-water dispersal in *O. compressus*. The frequency of movements among island and mainland habitat at this site is unknown, but this dispersal behavior is likely an important component of the ecology of *O. compressus* despite several potential risks. For example, the saline environment of the estuary (ranges between 11 and 38 ppt depending on the phase of the tide cycle [GTMNERR Water Quality Metadata]) likely poses a physiological challenge to this predominately terrestrial species. In addition, the estuary contains several potential aquatic predators, including Bottlenose Dolphins (*Tursiops truncatus*), American Alligators (*Alligator mississippiensis*), and several predatory fish.

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***OPHISOPS ELEGANS* (Snake-Eyed Lizard). BIFURCATION.** *Ophisops elegans* is a diurnal, ground dwelling, medium-sized lacertid lizard. It is widespread in the eastern Mediterranean region from southeastern Europe (northeastern Greece, Bulgaria, including Cyprus) to northeast Sinai and coastal Egypt, eastward to Iraq and Iran. It was also reported from Algeria (Sindaco and Jeremcenko 2008. The Reptiles of the Western Palearctic. Edizioni Belvedere, Latina, Italy. 579 pp.).

On 4 June 2012 at 0905 h, we tried to capture an *O. elegans* male first seen on an oak tree (*Quercus* sp.) in a scrubland area near the field school on Mt. Meron in northern Israel (33.011°N, 35.394°E; 897 m elev.). While trying to capture the individual, its tail was amputated as lacertids are known to readily autotomize their tails (Fitch 2003. J. Herpetol. 37:395–399; Pafilis et al. 2009. Evolution 63:1262–1278). The lizard (TAU 16297) was subsequently captured (50.3 mm SVL; 3.3 g) and its tail collected. The tail, autotomized at the base, was bifurcated approximately 2 cm posterior to the position where it was amputated. One tail tip is 0.5 cm longer than the other. We did not observe other *Ophisops* specimens with bifurcated tails in the field, and few individuals have regenerated tails (less than 1% of all specimens; authors' unpubl. data). We know of no other cases of tail bifurcation in this species (including 360 other Israeli specimens kept at the Tel Aviv University Zoological Museum).

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***PHRYNOSOMA CORNUTUM* (Texas Horned Lizard). NECROPHILIA.** Necrophilia has been documented in only five lizard species to our knowledge. These are the Giant Ameiva (*Ameiva ameiva*) by Vitt 2003 (*In* Pianka and Vitt [eds.], Lizards: Windows to the Evolution of Diversity, p. 103. Univ. of California Press, Berkeley) and Costa et al. 2010 (Herpetol. Notes 3:79–83), the Long-nosed Leopard Lizard (*Gambelia wislizenii*) in Fallahpour 2005 (Herpetol. Rev. 36:177–178), the Lesser Earless Lizard (*Holbrookia maculata*) in Brinker and Bucklin 2006 (Herpetol. Rev. 37:466), the Western Fence Lizard (*Sceloporus occidentalis*) in Shedd and Eisenburg 2012 (Herpetol. Rev. 43:338), and the Sleepy Lizard (*Tiliqua rugosa*) in Sharrad et al. 1995 (W. Austr. Nat. 20:33–35) and How and Bull 1998 (Herpetol. Rev. 29:240). Here we report this behavior observed in a sixth lizard species, *Phrynosoma cornutum*. We believe this to be the first recorded observation of necrophilia in this species.

While driving Owen Prather Highway (also known as New Mexico Highway 506) in Otero Co., New Mexico, USA, on 25 May 2012, we encountered two dead *Phrynosoma cornutum* killed by the vehicle in front of us (32.520211°N, 105.980033°W). We stopped to examine the scene and found that one of the lizards was male and the other was female. Based on their slightly overlapping positioning, we presume the lizards were attempting to mate at the time of death. While examining the dead lizards, a living conspecific approached the area, head-bobbing. Although not captured, the enlarged basal region of its tail suggests it was a male. Fearing this lizard would also be killed by vehicle traffic, we attempted scaring it away from the road by walking towards it.

Fig. 1. A living *Phrynosoma cornutum* male positioning itself on top of a freshly run-over female conspecific, next to a simultaneously run-over male conspecific.

The lizard would flee a short distance (approximately 1 m) when approached, but would return closer to the area of the dead lizards when we would back away a few steps. Having noticed this, we then allowed the male to approach the dead lizards without interfering. The male continued head-bobbing as it approached, placed one of its front limbs on the female's back, and positioned himself on top of the dead female (Fig. 1). It then would position its pelvis to either side of the female's body and would try to slide the lower half of its body under her, attempting to mate. The dead lizards were then moved to prevent the living male, other horned lizards, and scavenging wildlife species from being potentially attracted to the road. The male temporarily left the scene during this activity, but returned to where the dead lizards had been as soon as we moved approximately 1 m away. In an attempt to remove any remaining attractants, a shovel load of soil was then placed over the area where the dead lizards had been, and the male left the area altogether.

Because of the lack of behavioral interactions with the dead conspecifics, we believe this male was operating primarily on olfactory senses. Olfactory cues have been noted in this genus as being important in mating, interactions with conspecifics and other species, and in the marking of sites (Tollestrup 1981. Herpetologica 37:130–141). We believe this observation supports those claims, as the male lizard returned to the site even after the dead lizards were removed from the location of initial interaction. We also believe this observation suggests an intense drive for males of this species to reproduce when in the presence of a reproductively active, receptive female (based on the presumed mating positioning of the dead lizards), even if the potential mate is recently deceased and in the presence of observers who would be recognized as a physical threat and avoided under other circumstances. This observation occurred in a remote area where habituation of the lizard to humans is unlikely.

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***PODARCIS HISPANICUS* (Iberian Wall Lizard). PREDATION.** *Podarcis hispanicus* is a small lizard that inhabits most of the Iberian Peninsula, southern France, and North Africa. Its ability to adapt to varied environments has facilitated its dispersal to areas occupied by humans. This trend is shared by other organisms such as certain arthropods. In many situations the latter may prey on these lizards, while in others, the opposite may occur. It has been previously reported that large roaming spiders are able to sporadically catch reptiles (e.g., Hamilton 2010. Herpetol. Rev. 42:603; Raven 1990. Mem. Queensland Mus. 29:448), nevertheless, the evidence related to small spiders acting as predators is somewhat scarce.

PHOTO BY MARCELO AROCA

Fig. 1. Predation of *Podarcis hispanicus* by *Steatoda nobilis* in Villaviciosa de Odón, Spain.

On 10 March 2011 at 1415 h, a *Podarcis hispanicus* was found trapped in a garden at a residence outside Madrid, Spain (40.35699972°N, 3.90099983°W). It was entangled in a web made by a False Widow Spider (*Steatoda nobilis*) (Fig. 1), which repeatedly bit and wrapped the lizard, leaving it motionless. After a few minutes, the lizard was still alive but unable to move, while the spider came out of hiding several times in order to reinforce the structure and bite the prey again.

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***SCELOPORUS CLARKII* (Clark's Spiny Lizard). ENDOPARASITES.** *Sceloporus clarkii* occurs from central Arizona and southwestern New Mexico, USA, to northern Jalisco, Mexico (Stebbins 2003. A Field Guide to Western Reptiles and Amphibians, 3rd ed. Houghton Mifflin Co., New York. 533 pp.). To date, the only report of helminths from *S. clarkii* are the cestodes *Mesocestoides* sp. and *Oochoristica scelopori* and the nematodes *Cyrtosomum penneri*, *Physaloptera retusa*, *Piratuba prolifica*, *Skrjabinoptera phrynosoma*, and *Spauligodon giganteus* (Goldberg et al. 1994. J. Helminthol. Soc. Washington 61:73–83). The purpose of this paper is to add to the helminth list of *S. clarkii*.

Two male *S. clarkii* (mean SVL = 83.0 ± 4.2 SD, range = 80–86 mm) collected at Mazatlan (23.2167°N, 106.4167°W), Sinaloa, Mexico and deposited in the herpetology collection of the Natural History Museum of Los Angeles County (LACM), Los Angeles, California, USA as LACM 95628 (collected July 1960) and LACM 95637 (collected August 1963) were examined. The digestive tract was removed through a mid-ventral incision and the esophagus, small and large intestines were examined for helminths using a dissecting microscope. One species of Nematoda was found which was cleared in a drop of lactophenol, coverslipped on a microscope slide, studied under a compound microscope, and identified as *Strongyluris similis* from the large intestines of LACM 95628 (1 female) and LACM 95637 (3 females). Voucher helminths were deposited in the United States National Parasite Collection, Beltsville, Maryland, USA as *Strongyluris similis* (USNPC 105895). *Strongyluris similis* is a common parasite of sceloporine lizards (Goldberg et al. 1995. J. Helminthol. Soc. Washington 62:188–196; Goldberg et al. 1996. Am. Midl. Nat. 135:299–309; Goldberg et al. 2003. Southwest. Nat. 48:208–217). *Sceloporus clarkii* represents a new host record for *Strongyluris similis*; Sinaloa, Mexico is a new locality record.

We thank Gregory Pauly (LACM) for permission to examine *S. clarkii*.

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***SCELOPORUS CLARKII* (Clark's Spiny Lizard). NOCTURNAL FORAGING ACTIVITY.** On 1 June 2007, an adult male *Sceloporus clarkii* was observed to be active at night during a full moon in tropical dry forest habitat near Alamos, Sonora, Mexico (27.0167°N, 108.9333°W; elev. 396 m). We found *S. clarkii* foraging for insects with poor success at 2230 h; only one attempt to feed on moths was successful. This behavior was observed at a distance of 4 m from the lizard for a period of two hours. Following our observations, the lizard slowly took shelter within a rock crevice located 1.5 m from the foraging locality. Unfortunately, we could not take its body temperature (T_b), but temperatures recorded at the nearest meteorological station were 35.5°C at 2230 h and 33°C at 0030 h (T_{ave} = 31.2°C, T_{max} = 43°C, T_{min} = 19.8°C).

Diurnal reptiles are characterized by maintaining a high T_b to perform daily activities (Avery 1982. *In* C. Gans and F. H. Pough [eds], Biology of the Reptilia, Vol. 12, Physiology C, pp. 93–166. New York). Nocturnal activity in diurnal lizard species has only been reported in laboratory conditions (Dial 1978. Science 155:1551–1553). However, the finding of diurnal species on roads at night has been documented previously (Trombulak and Frissell 1999. Conserv. Biol. 14:18–30). Many authorities suggest that diurnal reptiles are attracted to roads at night to elevate their body temperatures during cooler periods, thus turning the roads into "heat islands" (Dodd et al. 1989. J. Herpetol. 23:197–200.). Nevertheless, more data are necessary to qualify these observations as true activity, because species are not thermally passive during inactivity and select stable thermal microenvironments (Ruben 1976. Herpetologica 32:323–325) and a high nocturnal body temperature may promote digestion (Harlow et al. 1976. J. Comp. Physiol. 111:1–6).

More often, suboptimal ambient temperatures at night preclude the activity of many species of reptiles. It is at this time when T_b falls near or below the level of the minimum voluntary temperature, which is the lower limit for activity. It is well-known that many reptiles take shelter before the natural environment becomes thermally unfavorable. However, in the case of *S. clarkii*, high diurnal temperatures (up to 43°C) resulting in elevated temperatures of the air, tree trunks and rocks, was enough to maintain T_b in the activity range until midnight.

It can be difficult to establish the limits between activity and inactivity, as some species are known to opportunistically engage prey under suboptimal environmental conditions. Thus, the environment may maintain T_b adequate for low levels of activity. According to Huey (1982. *In* C. Gans and F. H. Pough [eds], *op. cit.*, pp. 25–91) some reptile species voluntarily spend the night outside of their burrows to prolong potential foraging time and actively select relatively low body temperatures (i.e., voluntary hypothermia). Furthermore, voluntary nocturnal hypothermia produces a lower T_b that reduces metabolic loss throughout the night. This may be an adaptive response for individuals that fail to obtain food during the day, even if voluntary hypothermia becomes unfavorable and makes the lizard more vulnerable to nocturnal predators. In the case of *S. clarkii*, this hypothesis may explain the fact that we found the lizard outside its burrow. We also suggest that the full moon light helps to prolong foraging time at night, as long as the degree of voluntary hypothermia does not fall below the level of the minimum voluntary temperature.

The physiological and ecological advantages of voluntary hypothermia may be important for species affected by global warming, as the behavior could serve as a mechanistic response to minimize the risk of overheating stress during diurnal foraging. For example, the lizard *Sceloporus serrifer* in the Yucatan Peninsula has been observed to have fewer opportunities for foraging during the day because the species limits its period of activity due to the extremely high diurnal temperatures recorded throughout the year (Sinervo et al. 2010. Science 328:894–899). Additional nocturnal surveys are needed in order to document nighttime active foraging behavior or voluntary hypothermia, particularly in populations and species where the probabilities of extinction are high due to climate change (Sinervo et al. 2010, *op. cit.*). This would help to determine the frequency of this phenomenon and whether it is more common in species more sensitive to global changes in climatic conditions.

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***SCELOPORUS MAGISTER* (Desert Spiny Lizard). ENDOPARASITES.** *Sceloporus magister* occurs in the Sonoran Desert of Arizona, southern California, Sonora, northern Baja California, and the Colorado Plateau in southeastern Utah, adjacent Arizona, and Colorado and northwestern New Mexico (Jones and Schwalbe 2009. *In* Jones and Lovich [eds.], Lizards of the American Southwest: A Photographic Field Guide, pp. 226–229. Rio Nuevo Publishers, Tucson, Arizona). The previous reports of helminths from *S. magister* (*sensu stricto*) are listed in Goldberg et al. (1994. J. Helminthol. Soc. Washington 61:73–83). The purpose of this note is to add to the helminth list of *S. magister*.

Two female *S. magister* (mean SVL = 96.5 mm ± 5.0 SD, range, 93–100 mm) collected June 1966 at Guaymas (27.316667°N, 109.916667°W) Sonora, Mexico, and deposited in the herpetology collection of the Natural History Museum of Los Angeles County (LACM), Los Angeles, California, USA as LACM 25098, 25099 were examined. The digestive tract was removed through a mid-ventral incision and the esophagus, stomach, and small and large intestines were examined for helminths under a dissecting microscope. Individuals of one species of Nematoda were found in the large intestines; these were cleared in a drop of lactophenol, cover-slipped on a microscope slide, studied under a compound microscope, and identified as 480 *Cyrtosomum scelopori* in LACM 25098 and 649 in LACM 25099. Voucher helminths were deposited in the United States National Parasite Collection, Beltsville, Maryland, USA as *Cyrtosomum scelopori* (USNPC 105897). Other hosts for *C. scelopori* are listed in Baker (1987. Mem. Univ. Newfoundland, Occas. Pap. Biol. 11:1–325), Moravec et al. (1997. J. Helminthol. Soc. Washington 64:240–247), and Mayén-Peña and Salgado-Maldonado (1998. J. Helminthol. Soc. Washington 65:108–111).

Cyrtosomum scelopori is an oxyurid nematode that does not utilize an intermediate host (Anderson 2000. Nematode Parasites of Vertebrates: Their Development and Transmission. CABI Publishing, Oxon, U.K. 650 pp.). Infection likely occurs by *S. magister* licking soil containing *C. scelopori* eggs. *Sceloporus magister* is a new record for *Cyrtosomum scelopori*. Sonora, Mexico is a new locality record.

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SCELOPORUS ORCUTTI **(Granite Spiny Lizard). ENDOPARASITES.** *Sceloporus orcutti* occurs from lower slopes of the Peninsular Ranges of southern California, southward to just north of the Cape Region of Baja California and is largely restricted to granite boulders (Stebbins 2003. A Field Guide to Western Reptiles and Amphibians, 3rd ed. Houghton Mifflin Co., New York. 533 pp.). To date, the only report of helminths from *S. orcutti* is that of the cestode *Oochoristica scelopori* and the nematode *Spauligodon giganticus* (Goldberg and Bursey 1991. J. Wildl. Dis. 27:355–357). The purpose of this paper is to add to the helminth list of *S. orcutti*.

Two male *S. orcutti* (mean SVL = 87.0 ± 5.7 SD, range = 83–91 mm) were collected in April 1978 from Cataviña (29.73194°N, 114.72083°W), Baja California, Mexico, and deposited in the herpetology collection of the Natural History Museum of Los Angeles County (LACM), Los Angeles, California, USA, as LACM 128066, 128067. The digestive tract was removed through a midventral incision and the esophagus, stomach, and small and large intestines were examined for helminths under a dissecting microscope. Individuals of three species of Nematoda were found; these were cleared in a drop of lactophenol, cover-slipped on a microscope slide, studied under a compound microscope, and identified as *Parapharyngodon californiensis* (2 females) and *Strongyluris similis* (7: 3 males, 4 females) from the large intestine of LACM 128066 and *Thubuanea iguanae* (1 male) from the small intestine of LACM 128067. Voucher helminths were deposited in the United States National Parasite Collection, Beltsville, Maryland, USA as *Parapharyngodon californiensis* (USNPC 105898), *Strongyluris similus* (USNPC 105899), and *Thubunaea iguanae* (USNPC 105900).

Parapharyngodon californiensis has been previously known only from the xantusiid lizards *Xantusia bolsonae*, *X. henshawi*, and *X. vigilis* (Goldberg et al. 1993. J. Helminthol. Soc. Washington 60:165–169). *Sceloporus orcutti* is the fourth lizard species and first member of the Phrynosomatidae reported to harbor *P. californiensis*. *Parapharyngodon californiensis* is an oxyurid nematode that does not utilize an intermediate host (Anderson 2000. Nematode Parasites of Vertebrates: Their Development and Transmission. CABI Publishing, Oxon, U.K. 650 pp.). Infection likely occurs by *S. orcutti* licking substrate containing *P. californiensis* eggs. *Strongyluris similis* is a common parasite of sceloporine lizards (Goldberg et al. 1995. J. Helminthol. Soc. Washington 62:188–196; Goldberg et al. 1996. Am. Midl. Nat. 135:299–309; Goldberg et al. 2003. Southwest. Nat. 48:208–217). *Thubunaea iguanae* is known from a large number of lizards from the southwestern United States (McAllister et al. 2008. Comp. Parasitol. 75:241–254). Both *S. similis* and *T. iquanae* utilize insect intermediate hosts. *Parapharyngodon californiensis*, *Strongyluris similes*, and *Thubunaea iguanae* represent new host records for *S. orcutti*. Baja California, Mexico is a new locality record for *P. californiensis*.

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TRAPELUS MUTABILIS **(Desert Agama). REPRODUCTION.** *Trapelus mutabilis* is known from Egypt, Sinai, Syria, and Israel (Uetz [ed.], The Reptile Database, http://www. reptile-database.org. accessed 15 October 2012). It is diurnal, living at the base of dunes with dense vegetation (Schleich et al. 1996. Amphibians and Reptiles of North Africa, Koenigstein, Germany. 630 pp.). Information on *T. mutabilis* reproduction is limited and consists of one clutch of 5–7 eggs deposited in June, sperm production in spring with mating in April–May (Schleich et al., *op. cit.*). The purpose of this note is to provide additional information on *T. mutabilis* reproduction from a histological examination of gonads from museum specimens.

A sample of *T. mutabilis* deposited in the Zoological Museum of the Department of Zoology, Tel-Aviv University (TAUM), Tel Aviv, Israel was examined. The sample consisted of 18 males (mean SVL = 62.0 mm ± 4.5 SD, range = 56–73 mm), 9 females (mean SVL = 65.8 mm ± 6.9 SD, range = 56–77 mm) and one juvenile female (SVL = 50 mm) collected 1944–1986 in Israel (31.5°N, 34.75°E). Vouchers used in this study include: TAUM: 674, 1095, 1319, 1459, 1761, 1765, 2540, 3004, 3067, 3305, 3355, 3356, 3673, 4068, 4867, 5376, 5777, 6002, 6419, 6683, 7108, 7119, 7120, 8480, 13184, 13185, 13563, 13945.

A cut was made in the lower abdominal cavity and the left testis or ovary was removed, embedded in paraffin, cut at 5 µm sections and stained with Harris hematoxylin followed by eosin counterstain. Oviductal eggs were counted. Histology slides are deposited in TAUM.

Two stages were noted in the ovarian cycle: 1) quiescent, no yolk deposition; 2) early yolk deposition, basophilic vitellogenic granules in ooplasm. All females from the following months exhibited quiescent ovaries, sample size in parentheses: March (N = 1); April (N = 2); May (N = 1); August (N = 1); September (N = 1); October (N = 1); November (N = 1). A second female collected in May (TAUM 1095, SVL = 64 mm) contained 5 oviductal eggs and concurrent early yolk deposition for a subsequent clutch. This is the first evidence that *T. mutabilis* may produce multiple

Table 1. Monthly stages in the testicular cycle of 18 *Trapelus mutabilis* from Israel.

Month	N	Regression	Spermiogenesis
March	4	0	4
April	7	0	7
May	2	0	2
June	2	1	1
August	2	2	0
October	1	1	0

clutches in the same reproductive season. One female (SVL = 50 mm) with quiescent ovaries was considered a sub-adult.

Two stages were observed in the testicular cycle: 1) Regression, the germinal epithelium in the seminiferous tubules is reduced to 1-3 layers of predominantly spermatogonia and Sertoli cells; 2) spermiogenesis, lumina of the seminiferous tubules are lined by sperm or rows of metamorphosing spermatids. The presence (Table 1) of males with regressed testes from June and August, marking the end of spermiogenesis, and a female with oviductal eggs in May indicates that *T. mutabilis* follows a seasonal reproductive cycle with breeding and ovulation in spring, typical of temperate zone lizards (Fitch 1970. Univ. Kansas Mus. Nat. Hist. Misc. Publ. 52:1–247).

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***VARANUS MERTENSI* (Mertens' Water Monitor). PREDATION.** Identifying trophic links is necessary to construct food webs, which in turn are critical for understanding multiple areas of the ecology of a given species, including community interactions, predator-prey dynamics, and the impacts of invasive species. Trophic links are often poorly understood in the tropics, including the Australian wet-dry tropics.

Varanus mertensi is a large aquatic lizard (up to about 1 m in total length) inhabiting freshwater systems in tropical Australia (Cogger 2000. Reptiles and Amphibians of Australia. Reed New Holland, Sydney. 808 pp.). Although few predators are large enough to prey upon adult *V. mertensi*, eagles are an exception. We report a case of *V. mertensi* predation by a White-bellied Sea Eagle (*Haliaeetus leucogaster*) in tropical Australia, based on remains under a feeding perch near an eagle nest. We discuss the importance of monitor lizards as prey for eagles, and implications for population declines in monitors with the arrival of invasive Cane Toads (*Rhinella marina*) in northern areas of Western Australia.

On 16 May 2012 the desiccated tail of a *V. mertensi* was found under a *Eucalyptus* tree, approximately 90 m from an active sea eagle nest at the junction of the Chamberlain and Pentecost rivers at El Questro Wilderness Park in the Kimberley Region (15.968847°S, 127.928739°E). The tail was on the ground next to multiple bones of two individual catfish, and several feathers of a Sulphur-crested White Cockatoo (*Cacatua galerita*). The tree was one of several feeding perches of a pair of sea eagles. An earlier climb into the eagle nest on 9 May 2012 confirmed two incubating eggs. The nest was ca. 30 m high in a *Eucalyptus* tree. The sex of the dead lizard could not be determined, but based on size was a medium-sized adult. Although it is possible that the eagle found the lizard as carrion, the prey item was well within the prey-size range of the raptor.

Sea eagles are previously unreported predators of *V. mertensi*, but this probably reflects the dearth of dietary studies of tropical Australian eagles, rather than an infrequent trophic interaction. Sea eagles are limited to coastal areas and large inland rivers. In the latter areas, where *V. mertensi* is widespread, the monitor is possibly an important food item for the eagles. *Varanus mertensi* is one of three species of Australian monitor lizards that suffer severe population-level declines, via lethal toxic ingestion, with the invasion of *Rhinella marina* (e.g., 87–93%, Doody et al. 2009. Anim. Conserv. 12:46–53). Cane Toads began to invade the site in 2012 (S. Doody, unpubl. data). Thus, invading Cane Toads may be essentially removing an important prey item for the eagles, potentially influencing the energetics and reproductive success of these apex predators. Regardless, we predict a shift in the diet in sea eagles as a result of toad invasion and declines in *V. mertensi* (and of *V. panoptes*; Doody and Cherriman 2012. Herpetol. Rev. 43:653–654). Dietary surveys of eagle nest remains before and after toad invasion in the Kimberley Region would test this prediction.

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SQUAMATA — SNAKES

***AGKISTRODON CONTORTRIX* (Copperhead). DIET AND ACCIDENTAL MORTALITY.** At ca. 1115 h on 08 June 2012, an adult male *Agkistrodon contortrix* (total length = 824 mm, SVL = 705 mm) was found near death in a rural yard, ca. 9.8 km WSW Brogdon, Sumter Co., South Carolina, USA (33.77818°N, 80.35468°W, datum: WGS84). Both mandibles of a bird's bill were protruding outward from separate exit wounds on the left side of the snake's body, ca. 90 mm posterior to the tip of its snout (Fig. 1), and a small point of broken mandibular bone was protruding outward on the right side. The snake was found dead a few hours later. The partial skull of a *Corvus ossifragus* (Fish Crow) was later removed from the snake's throat. No additional remains were in the digestive tract and the entire bird would have been far too large for the snake to swallow. The angle of the bill protrusion indicated that the head was most likely swallowed backward. This, along with the fragmented condition of the skull, suggests that the snake had encountered only the detached partial head of the bird and attempted to scavenge it.

Numerous reports exist of injury and mortality in snakes during feeding attempts. These include accounts of indigestible foreign objects that may contain the scent of prey (Palmer and Braswell 1995. Reptiles of North Carolina. Univ. North Carolina Press, Chapel Hill. xiii + 412 pp.), as well as trauma from natural prey items with sharp spines or otherwise injurious body parts (Carr 1940. A Contribution to the Herpetology of Florida. University of Florida, Gainesville. 118 pp.). As a generalist feeder and known scavenger, *A. contortrix* may fall victim to such accidental mortality relatively frequently. To our knowledge, this represents the first record of *A. contortrix* feeding on *C. ossifragus*, or attempting to feed on any portion of such a large bird.

The snake and partial crow skull are deposited in the collections of the North Carolina State Museum of Natural Sciences

Fig. 1. *Agkistrodon contortrix* with attempted meal (head of a *Corvus ossifragus*, Fish Crow) that proved fatal.

(NCSM 79738). Brian J. O'Shea helped confirm identification of the skull.

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AMPHIESMA STOLATUM **(Striped Keelback). PREDATION.** *Amphiesma stolatum* is a small (to 80 cm total length) diurnal snake found throughout South and Southeast Asia. It is one of the most common snakes in this region, found in villages, paddy fields, thick grass, bushes, and gardens (Whitaker and Captain 2004. The Snakes of India. Draco Books, India. 481 pp.). Herein, we report predation by a free ranging chicken on an adult *A. stolatum* from a village adjacent to Lawachara National Park, Bangladesh (25.8907694°N, 088.8502083°E; datum WGS 84). On 15 April 2012, at ca. 1100 h, while conducting a visual herpetological survey in the village, we observed an adult domestic chicken in a backyard garden preying upon an adult *A. stolaum* (Fig. 1). It is likely that many other birds prey upon *A. stolatum* as well.

Fig. 1. Predation by a free ranging chicken on an adult *Amphiesma stolatum*.

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ATRACTUS GUENTHERI **(Günther's Ground Snake). REPRODUCTION.** *Atractus guentheri* has a very restricted distribution in the coastal Atlantic Rainforest in the southeast of the state of Bahia, Brazil (Fernandes and Argôlo 1995. Bol. Mus. Nacional, Nova Série, Zoologia 397:1–5; Passos et al. 2010. Zootaxa 2364:1–63). Many aspects of its natural history are poorly known with nothing reported about reproduction (Fernandes and Puorto 1993. Mem. Inst. Butantan, 55:7–14). Here we provide the first data on clutch size, egg morphometry, and timing of oviposition for *A. guentheri*.

At 1830 h on 07 December 2011, during the rainy season in the Atlantic rainforest of Brazil, an adult female *A. guentheri* (SVL = 427 mm, tail length = 43 mm) was captured by local farmers crossing a dirt road 15 m from a large river (Rio de Contas) near the city of Itabuna, Bahia, Brazil (14.7976°S, 39.2334°W, datum WGS84; elev. 38 m). The road passed through vegetation locally known as Cabruca, a Cacao plantation system that retains the largest trees. Two days post capture, the female deposited six white elliptical eggs. Mean egg measurements were: length = 30.2 mm (range = 27.8–32.7 mm); width = 11.3 mm (range = 10.8–11.8 mm); mass = 2.67 g (range = 2.4–2.9 g). Unfortunately, all eggs were lost during incubation and their fertility could not be assessed. The *A. guentheri* was deposited at the Reptile Collection of Museu de Zoologia da Universidade Federal da Bahia (MZUFBA–2382).

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BOA CONSTRICTOR **(Boa Constrictor). REPRODUCTION / FACULTATIVE PARTHENOGENESIS.** Facultative parthenogenesis is the alternation between sexual and asexual reproduction (Booth et al. 2011. J. Hered. 102:759–763). In vertebrates, facultative parthenogenesis has mostly been recorded in captive animals, but recently documented in wild populations (e.g., snakes; Booth et al. 2012. Biol. Lett. *in press*). This mode of parthenogenesis is rare in reptiles (Lampert 2008. Sex Dev. 2:290–301). In lizards, it has only been reported in *Phymaturus patagonicus* (Chiszar et al. 1999. Herpetol. Rev. 30:98), monitor lizards (Lenk et al. 2005. Amphibia-Reptilia 26:507–514), and Komodo Dragons (Watts et al. 2006. Nature 444:1021–1022). In snakes, facultative parthenogenesis has been reported pitvipers, *Agkistrodon contortrix* and *A. piscivorus* (Schuett et al. 1998. Herpetol. Nat. Hist. 5:1–10; Booth and Schuett 2011. Biol. J. Linn. Soc. 934–942; Booth et al. 2012, *op. cit.*), and in the boid *Epicrates maurus* (Booth et al. 2011. J. Hered. 102:759–763). Recently, Booth et al. (2011, *op.*

cit.) recorded the first evidence of facultative parthenogenesis in *Boa constrictor*. Here we report the second record of facultative parthenogenesis in captivity for *B. constrictor*.

A female *B. constrictor*, born in captivity (July 2003), was maintained in complete isolation in a glass enclosure with lighting and constant temperature between 28 and 32°C and was fed weekly. On 27 May 2012, RALR and BCLB recorded that the snake (SVL = 1700 mm, 3340 g) gave birth to 20 dead all male hatchlings and ten infertile ova. The average measurements of the offspring were: SVL = 259 ± 1.13 mm (range = 208–312 mm); tail length = 39 ± 0.15 mm (range = 32–45 mm); 18.5 ± 1 g (range = 14.3–23.9 g). No malformations were present. We cannot distinguish the reason for the death of hatchlings, but one month before parturition metronidazole medication was administered as an antibiotic. The dead hatchlings and the ova are deposited in the Colección Nacional de Anfibios y Reptiles, Instituto de Biología, Universidad Nacional Autónoma de México.

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CONOPHIS VITTATUS **(Striped Road Guarder). DEFENSIVE BEHAVIOR / DEATH FEIGNING.** Thanatosis or death feigning behavior has been reported in several species of snakes (Gehlbach 1970. Herpetologica 26:24–34; Zeeshan et. al. 2011. Herpetol. Notes 4:295–267). On 14 February 2012, at 1930 h, I found an adult *C. vittatus* (SVL = 330 mm) under a log in the ecotone between tropical deciduous forest and oak forest in the Municipality of Villa Purificación, Jalisco, Mexico (19.782505°N, 104.719172°W, datum WGS84; elev. 585 m). Immediately upon capture the snake displayed typical defensive behavior: agitation, coiled posture, fast movements, musk production, and biting attempts. The snake was placed in a bag for further photography. When released, it rotated the anterior third of its body onto its back with its mouth wide open and tongue sticking out (Fig. 1) and did not demonstrate any reaction to manipulation. After approximately 1 min, the snake rotated the full length of its body and remained immobile on its back. I was able to handle the specimen for about 11 min. before the snake began to react and attempt to escape. Photographs of the snake were deposited at University of Texas Arlington Digital Collection (UTADC 7499, 7500, 7574).

Fig. 1. Death-feigning behavior in *Conophis vittatus* from Jalisco, Mexico.

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CONTIA TENUIS **(Common Sharp-tailed Snake). ALBINISM.** Despite high population densities throughout the northern California portion of its range, little is known about *Contia tenuis* (Hoyer et al. 2006. Northwest. Nat. 87:195–202) and aberrant phenotypes in this species are rarely observed (R. Hoyer, pers. comm.). Here I report on albinism in *C. tenuis*.

At 1350 h on 11 February 2012, I found an aberrant *Contia tenuis* in Bidwell Park, Chico, Butte Co., California, USA (39.7458°N, 121.8086°W; datum: WGS84). The specimen was a juvenile, approximately 118 mm (total length), lacking normal pigmentation in the skin and eyes, suggesting albinism (Fig. 1A). The snake was found thermoregulating under a piece of plywood lying beneath a large Valley Oak (*Quercus lobata*). According to Bechtel (1995. Reptile and Amphibian Variants: Colors, Patterns, and Scales. Krieger Publ. Co., Melbourne, Florida. 206 pp.), "true albinism in snakes is a congenital decrease or absence of melanin in the skin, mucosa, and eyes." This description seems appropriate, considering the pink eyes and pale, pinkish orange dorsum of this specimen. Further, the venter was light colored, rather than the typical alternating, dark-light pattern of the belly scutes in normal individuals of this species (Fig. 1B).

Fig. 1. A) Albino *Contia tenuis* from Butte Co., California. B) Venter showing lack of melanin in belly scutes.

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***CROTALUS ATROX* (Western Diamond-backed Rattlesnake). HABITAT USE.** *Crotalus atrox* is usually found in dry washes, rocky slopes, and open desert (Brennan and Holycross 2006. A Field Guide to Amphibians and Reptiles in Arizona. Arizona Game and Fish Dept., Phoenix, Arizona. 150 pp.; Stebbins 2003. A Field Guide to Western Reptiles and Amphibians. Houghton Mifflin Co., Boston, Massachusetts. 533 pp.). Here, I report encounters with *C. atrox* in an unusual habitat: the leaf litter of Mesquite trees (*Prosopis* sp.). Mesquite usually occurs in a grassland/savannah-like habitat where the trees are not touching, hence tree cover may be 20–50%. In Arizona, near water courses, mesquite forms impenetrable thickets where branches of the trees interlace. On 16 April 2011, between 0930 and 1000 h (air temp = 24°C) on the Tarr Ranch, at the junction of Burro Creek and the Big Sandy River (34.53°N, 113.56°E, datum WGS84; elev. 500 m) in southern Mohave Co., Arizona, USA, I was searching for metal objects under a big thicket of mesquite trees. Lifting up a metal object that was buried 25 cm deep at the base of a mesquite tree, I encountered a large *C. atrox* that was buried so deep that I could not see it until I removed the metal object. About 15 min later, at the edge of another thicket, I was removing some metal wire and surprised two large *C. atrox* that were buried under the wire and leaf litter, which was about 30 cm deep. One was coiled, the other stretched out but touching the other. Mesquite thickets harbor a variety of nesting songbirds, several species of rodents, and lizards, all common prey items of *C. atrox* (Stebbins 2003, *op. cit.*). Thus these thickets may provide a source of food for these reptiles and in the winter and summer heat, the deep leaf litter may provide thermal insulation for inactive snakes.

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***EIRENIS ROTHII* (Roth's Dwarf Racer). REPRODUCTION.** *Eirenis rothii* is known from Turkey, Syria, Lebanon, and Israel (Baran and Atatür 1998. Turkish Herpetofauna [Amphibians and Reptiles]. Ministry of Environment, Republic of Turkey, Ankara. 214 pp.). The purpose of this note is to provide the first information on the timing of the *E. rothii* testicular cycle.

A sample of 14 *E. rothii* males (mean SVL = 190.3 mm ± 32.0 SD, range = 125–163 mm) collected 1960–1980 in Israel and deposited in the Zoological Museum of the Department of Zoology, Tel-Aviv University (TAUM), Tel Aviv, Israel was examined: TAUM 4009, 5589, 6019, 6020, 7681, 7865, 7870, 7871, 8331, 8491, 10313, 10314, 11146, 12239. A cut was made in the lower abdominal cavity and the left testis and part of the vas deferens was removed, embedded in paraffin, cut into 5 µm sections and stained with Harris hematoxylin followed by eosin counterstain. Histology slides are deposited in TAUM. Three stages in the testicular cycle were noted: 1) Residual spermiogenesis, a few sperm are present in the lumina of the seminiferous tubules from a previous spermiogenesis, germinal epithelium reduced to a few layers of spermatogonia with interspersed Sertoli cells; 2) Regressed, germinal epithelium in seminiferous tubules reduced to a few layers of spermatogonia with interspersed Sertoli cells; 3) Early recrudescence, proliferation of germ cells for the next period of sperm formation (spermiogenesis) has commenced. A few primary spermatocytes are present. Monthly distribution of stages in the testicular cycle with sample size in parenthesis were: January (1) one recrudescence; February (1) one recrudescence; April (7) six regressed, one vas deferens only; May (5) one residual spermiogenesis, one regressed, three recrudescence. Eight of nine examined vasa deferentia (89%) contained sperm. The smallest reproductively active male, sperm in vas deferens (TAUM 8491) measured 175 mm SVL.

The absence of full spermiogenesis or late recrudescence characterized by the presence of secondary spermatocytes and spermatids, and vasa deferentia with sperm in spring, suggests *E. rothii* may follow an aestival spermatogenesis (*sensu* Saint Girons 1982. Herpetologica 328:5–16) in which spermiogenesis is completed in autumn and matings and ovulation occurring in spring. Other congeners of *Eirenis* deposit eggs in summer (Arakelyan et al. 2011. Herpetofauna of Armenia and Nagorno-Karabakh. Society for the Study of Amphibians and Reptiles, Ithaca, New York. 149 pp.), also suggesting they may follow an aestival spermatogenesis.

I thank Shai Meiri (TAUM) for permission to examine *E. rothii*, Erez Maza (TAUM) for facilitating the loan and the National Collections of Natural History at Tel Aviv University for providing samples of *E. rothii* for this study.

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***EPICRATES ANGULIFER* (Cuban Boa). DIET.** *Epicrates angulifer* is a medium-sized snake endemic to Cuba, where it is widespread (Schwartz and Henderson 1991. Amphibians and Reptiles of the West Indies. Descriptions, Distributions, and Natural History. Univ. Florida Press, Gainesville. 720 pp.). It inhabits a wide range of habitats, from xerophytic scrub to broadleaf forests, where it is often found in trees up to 10 m in height (Henderson and Powell 2009. Natural History of West Indian Reptiles and Amphibians. Univ. Press Florida, Gainesville. 496 pp.). This species preys on small vertebrates, principally birds and mammals, although frogs, lizards, and other snakes are also taken (Schwartz and Henderson, *op. cit.*; Henderson and Powell, *op. cit.*). Wild individuals are known to hunt domestic fowl (Barbour and Ramsden 1919. Mem. Mus. Comp. Zool. 47:71–213), while captive specimens take a variety of bird species (Morell et al. 1998. Flora y Fauna 2:40–42).

On 24 May 2010, at 0535 h, we found an adult *E. angulifer* (ca. 2000 mm total length) preying on a nestling *Tyrannus dominicensis* (Gray Kingbird) in the gardens surrounding the facilities of the Siboney Biological Station, Siboney-Juticí Ecological Reserve, eastern Cuba (19.9608°N, 75.7155°W; datum NAD 27). The kingbird nest was 7.8 m above ground in a Yarúa Tree (*Caesalpinia violacea*). The snake's tail was coiled around a branch just below the nest and the rest of its body was hanging down, with the anterior portion of the nestling bird's body in the snake's mouth (Fig. 1). The adult kingbird pair defended its nest by flying around the snake, bill-snapping and emitting high-pitched calls, but the snake appeared to be unaffected. At 0605 h the boa finished swallowing its prey and moved to the nest, coiling itself above it. Another young kingbird was found some minutes later, alive on the ground near the nest; we assume it was a sibling of the depredated bird and escaped by dropping from the tree.

Fig. 1. Adult *Epicrates angulifer* swallowing a nestling *Tyrannus dominicensis* (Gray Kingbird) in the Siboney Biological Station, Cuba (the arrow indicates the snake's eye). The nest, wrapped in *Tillandsia* sp. leaves, is situated in the upper area of the photo.

Our observation is the first record of *E. angulifer* preying on *T. dominicensis*. Several authors have mentioned birds in the diet of *E. angulifer* (Henderson and Powell, *op. cit.*) and Vogel (1965. Aquarien Terrarien 12:340–343) reported that the species regularly depredates bird nests, but our observation represents the first documentation of this behavior.

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***ERYTHROLAMPRUS AESCULAPII* (False Coral). DIET.** *Erythrolamprus aesculapii* is a diurnal terrestrial snake that is widely distributed in Brazil (Marques 1996. Rev. Brasil. Biol. 13:747–753). It is strongly ophiophagous, but juveniles also prey on lizards and amphibians. (França et al 2008. Copeia 2008:23–28; Marques and Puorto 1991. Mem. Inst. Butantan. 53:127–134). On 13 April 2012, we dissected an adult female *E. aesclapii* (CRLZ 000290; SVL = 69.21 cm, total length = 76.37cm; 102 g) collected at the Unilavras Biological Reserve – Boqueirão, Brazil (21.34638°S, 44.99083°W, datum WGS84; elev. 1250 m). In the stomach we found a young *Atractus pantostictus* (CRLZ 000345; SVL = 7.63 cm, total length = 9.29 cm; 1.47 g). Although *A. pantostictus* is common in the cerrado (savannah) region of Brazil it has not been previously recorded in the diet of *E. aesculapii*.

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***LEPTOPHIS AHAETULLA* (Swordsnake). DIET.** *Leptophis ahaetulla* is a terrestrial and arboreal snake that feeds primarily on amphibians and secondarily on lizards, small birds, and small mammals (Albuquerque et al. 2007. J. Nat. Hist. 41:1237–1243; Vanzolini et al. 1980. Répteis das Caatingas. Academia Brasileira De Ciencias, Rio De Janeiro. 161 pp.). On 2 October 2011, at 1100 h, in the Estação Ecológica do Tapacurá (8.049°S, 35.221°W, datum: WGS 84; elev. 102 m), São Lourenço da Mata city, Pernambuco, Brazil, we observed a male *L. ahaetulla* (SVL = 93.6 cm) feeding on a male lizard, *Polychrus marmoratus* (Fig. 1; SVL = 13.7 cm). This is the first record of *P. marmoratus* in the diet of *L. ahaetulla*. Photographs of the predation event are deposited Paleoherpetological Laboratory of Universidade Federal Rural de Pernambuco, Recife, Pernambuco, Brazil (CHP UFRPE I001).

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Fig. 1. *Leptophis ahetulla* ingesting a freshly killed *Polychrus marmoratus* in Atlantic forest of northeastern Brazil.

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***LIOPHIS POECILOGYRUS* (Yellow-bellied Liophis). REPRODUCTION.** The colubrid snake *Liophis poecilogyrus* is broadly distributed in South America. Despite recent studies of its reproductive biology (Pinto and Fernandes 2004. Phyllomedusa 3:9–14; Vitt 1983. Herpetologica 39:52–66), no detailed data are available on hatchling size. Herein, we expand the knowledge on the reproductive biology of *L. poecilogyrus* through the record of hatchling morphometry.

At 1140 h on 12 May 2010, a clutch of 7 *L. poecilogyrus* eggs was collected in an urban area of Caucaia Municipality, state of Ceará, northeastern Brazil. The eggs were placed in a terrarium with a humid substrate of sand and leaf-litter, and maintained at room temperature in the laboratory of herpetology of the Núcleo Regional de Ofiologia da Universidade Federal do Ceará. The eggs averaged 2.83 ± 0.14 cm (range = 2.70–3.07 cm) in length and 1.60 ± 0.29 cm (range = 1.07–1.94 cm) in diameter, and all hatched within 24 h of collection. The newborn neonates measured 15.74 ± 0.44 cm (range = 15.10–16.30 cm) SVL; 2.71 ± 0.12 cm (range = 2.59–2.91 cm) tail length; and 2.82 ± 0.09 g (range = 2.64–2.91 g) mass. Hatchling voucher specimens were deposited in the scientific collection Coleção Herpetológica da Universidade Federal do Ceará (CHUFC 3550–3552).

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***MICRURUS OBSCURUS* (Black-necked Amazonian Coralsnake). MAXIMUM SIZE.** The maximum size reported for *Micrurus* species based on an examination of the literature is 1602 mm (*M. spixii princeps*) and 1520 mm (*M. spixii martius*; Roze 1996. Coral Snakes of the Americas: Biology, Identification, and Venoms. Krieger Publ. Co., Malabar, Florida. 340 pp.). However, after examining specimens, Harvey (2003. Ann. Carnegie Mus. 72:1–52) concluded that these records were incorrect. Thus, the correct maximum total length for *Micrurus* is currently 1486 mm, based on a *Micrurus ancoralis ancoralis* from the Andes (Harvey, *op. cit.*). On 10 January 2012, at 1830 h, we found a freshly-killed female *M. obscurus* (SVL = 1480 mm; total length = 1555 mm) in Chácara de Jesus, Rio Branco, Acre, Brazil (9.911880°S, 67.767382°W, datum: WGS84; elev. 173 m). The habitat where the specimen was caught was secondary forest (capoeira) surrounded by pastures, agricultural land, and ponds. Our record exceeds the maximum recorded total length for the species by 210 mm (15%), and 69 mm (5%) for the genus. The specimen (UFAC 0380) was deposited in the herpetological collection at Universidade Federal do Acre. Fieldwork was funded by UNINORTE - Programa de Iniciação Científica and conducted under SISBIO permit n. 27290-1/2011.

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***MICRURUS SERRANUS* (Coral Verdadera). DIET.** *Micrurus serranus* is a small coralsnake endemic to the inter-Andean dry valleys of Bolivia (Harvey et al. 2003. Ann. Carnegie Mus. 72:1–52). While most species of Bolivian coral snakes are distributed in lowland habitats, *M. serranus* generally occurs at higher altitudes, being found at elevations as high ~2750 m (Muñoz-Saravia et al. 2009. Checklist 5:510–512). Data on the diet of this species are lacking. Known prey of *M. serranus* are primarily snakes and amphisbaenians and include *Leptotyphlops striatulus*, *Amphisbaena cegei* (Harvey et al., *op. cit.*), *Lystrophis semicinctus*, and *Oxyrhopus* sp. (A. Langer, pers. comm.). Here we report a new snake species in the diet of *M. serranus*.

We dissected an adult female *M. serranus* (SVL = 545 mm, tail length = 35 mm) that was found dead on a dirt road (18.03°S, 64.15°W, datum WGS 84; elev. 1320 m) on 5 February 2011 in Florida Province, Santa Cruz Department, Bolivia. Inside the *M. serranus* we found an adult male *Apostolepis multicincta* (Dipsadidae; SVL = 290 mm; tail length = 40 mm) that had been ingested head-first (Fig. 1). This report confirms an additional snake species in the diet of *M. serranus*, providing further evidence for its ophiophagous feeding habits.

FIG. 1. Adult female *Micrurus serranus* from Florida Province, Santa Cruz, Bolivia. Protruding from the sides of the body of the *M. serranus* are the head and tail of an adult male *Apostolepis multicincta* that it had consumed.

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***NAJA HAJE* (Egyptian Cobra). DIET / OPHIOPHAGY.** *Naja haje* is a large cobra (to 2.5 m total length) that is distributed across much of North Africa south to the Congo basin and east to Kenya and Tanzania (Trape et al. 2009. Zootaxa 2236:1–25). The diet of *N. haje* is based primarily on anecdotal data, suggesting the consumption of a variety of vertebrates (anurans, small mammals, small tortoises, lizards, small birds and their eggs, and occasionally snakes, including conspecifics; Schleich et al. 1996. Amphibians and Reptiles of North Africa. Koeltz Scientific Publishers, Koenigstein. 630 pp.; Trape and Mané 2006. Guide des serpentes d'Afrique occidentale. Editions, Paris. 226 pp.). Here we report two original observations of ophiophagy by *N. haje* in Dghoumes National Park, in southern Tunisia. The protected area consists of a halophytic zone merging with the Chott El Jerid, an intermediate plain of sub-desert continental steppe, marked by ephemeral watercourses (*wadis*), and a mountain chain to the north.

The first observation occurred at 0830 h on 20 September 2011. EF and an eco-guard discovered an adult *N. haje* (ca. 2

m total length) entwined with an adult female *Cerastes cerastes* (Horned Viper; SVL = 64.0 cm; tail length = 4.8 cm). Their arrival disturbed the snakes and the *N. haje* immediately released the *C. cerastes* and slipped into a bush. The partially paralyzed *C. cerastes* soon died and was preserved. The second observation occurred on 3 October 2011. Two eco-guards observed a recently killed *C. cerastes* surrounded by many snake tracks on the sand. Based on size and length, these tracks were likely from a cobra which we assume had been disturbed while preying on the viper. *Cerastes cerastes* is a specialized semi-fossorial snake that ambushes rodents and lizards while partially buried in soft sand (Young and Morain 2001. J. Exp. Biol. 205:661–665). Because this species is quite common in Dghoumes National Park, it may be a usual prey for an active predator like *N. haje*.

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***NAJA KAOUTHIA* (Monocellate Cobra). REPRODUCTION / EGG SIZE.** *Naja kaouthia* is a non-spitting cobra that inhabits plains and mountains up to 700 m elevation throughout Thailand, Peninsular Malaysia, India, China, Myanmar, Laos, Cambodia, and Vietnam (Cox et al. 1998. A Photographic Guide to Snakes and other Reptiles of Peninsular Malaysia, Singapore and Thailand. New Holland Publishers, United Kingdom. 144 pp.). It also can be found in secondary forests and near human habitation (Ibrahim et al. 2008. The Common Amphibians and Reptiles of Penang Island. The State Forestry Department, Penang, Malaysia, 116 pp.). The total length of this species is up to 200 cm and the females can lay up to 45 eggs in a clutch (Cox et al., *op. cit.*).

On 4 December 2011, an adult female *N. kaouthia* (total length = 130 cm; 1700 g) was found dead (probably killed by villagers) near a paddy field at Kampung Anak Kurau, Taiping, Perak, Malaysia (4.562989°N, 100.470401°E, datum: WGS84; elev. <150 m). Dissection revealed 17 oval eggs that measured (mean ± SD) 5.72 ± 0.35 cm (range = 5.0–6.2) in length, 2.76 ± 0.14 cm (range = 2.5–3.0) in diameter, and weighted 27.94 ± 1.20 g (range = 26–30). The specimen (11USM-BK-NK01) was preserved and deposited at School of Pharmacy, Universiti Sains Malaysia.

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***NERODIA CLARKII CLARKII* (Gulf Saltmarsh Watersnake). PREDATION.** *Nerodia clarkii* inhabits saltmarshes and coastal brackish waters along the Gulf Coast from Florida to Texas and on the northern coast of Cuba (Ernst and Ernst 2003. Snakes of the United States and Canada. Smithsonian Institution Press, Washington D.C. 668 pp.). Predators of *N. clarkii* likely include large carnivorous fish, large wading birds, *Agkistrodon piscivorus*, *Alligator mississippiensis*, and *Crocodylus acutus* (Ernst and Ernst, *op. cit.*), as well as large invertebrates such as crabs (Gibbons and Dorcas 2004. North American Watersnakes. Univ. Oklahoma Press, Norman. 438 pp.). To our knowledge, *Callinectes sapidus* (Blue Crab) represents the only previously published observation of a predation attempt on *N. clarkii* (Mohrman et al. 2008. Herpetol. Rev. 39:355–356).

PHOTO BY STEVE REISINGER

FIG. 1. Adult *Grus americana* (Whooping Crane) consuming a *Nerodia clarkii clarkii* at Aransas National Wildlife Refuge, Texas, in February 2012.

On 4 February 2012, an adult *Grus americana* (Whooping Crane) was observed and photographed (Fig. 1) consuming a *N. clarkii* at the Aransas National Wildlife Refuge, Aransas Co., Texas, USA (28.15294°N, 96.89620°W; datum WGS84). The crane consumed the snake headfirst after manipulating it for a short time. This observation represents the first documented vertebrate predator of *N. clarkii.* Diets of Whooping Cranes on wintering grounds in Texas mainly consist of Blue Crabs and clams, with other commonly reported prey items consisting of fish, snails, acorns, fruit of Carolina Wolfberry (*Lycium caroliniana*), and crayfish (Allen 1952. The Whooping Crane. Research Report 3, National Audubon Society, New York. 246 pp.; Hunt and Slack 1989. J. Wildl. Manage. 3:1150–1154). An *A. piscivorus* and unknown watersnake (possibly *N. clarkii*) were reported as prey items of Whooping Cranes in Texas (Allen, *op. cit.*). Understanding the diet of Whooping Cranes, especially when crabs and other common prey items are unavailable, such as during droughts, will assist conservation efforts to protect habitats and associated prey items on wintering grounds and during migration.

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RHINOCEROPHIS AMMODYTOIDES **(Yararanata). DIET.** *Rhinocerophis ammodytoides* is a medium-sized pitviper endemic to southern Argentina (Carrasco et al. 2010. Amphibia-Reptilia 31:323–338). The diet of this species is known to include small vertebrates such as lizards and rodents (Cei 1993. Reptiles del Noroeste, Nordeste y Este de la Argentina. Herpetofauna de las Selvas Subtropicales, Puna y Pampas. Mus. Reg. Sci. Nat. Torino. 945 pp.; Martins et al. 2002. *In* Schuett et al. [eds.], The Biology of Pitvipers, pp. 307–328. Eagle Mountain Publ., Eagle Mountain, Utah). Here we report two novel lizard prey species for *R. ammodytoides*: *Pristidactylus scapulatus* (Leiosauridae) and *Liolaemus cf. ruibali* (Liolaemidae).

At 1500 h on 2 April 2012, we captured a subadult female *R. ammodytoides* (total length = 422 mm) in Quebrada Vallecito, Andes Mountains, Calingasta Department, San Juan Province, corresponding to pre-Andean limit of the occidental Monte Phytogeographic Region, Argentina (31.20°S, 69.28°W, datum WGS84; elev. 2860 m). The snake contained an obvious food item and dissection revealed a recently ingested *L. cf. ruibali* (SVL = 60 mm) and the posterior portion of a *P. scapulatus* (SVL ca. 70 mm) in the stomach (Fig. 1). Together, the prey totaled 15% of the snake's mass. The snake and prey were deposited in the Colección Herpetológica de la Universidad Nacional de San Juan (UNSJ).

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FIG. 1. *Rhinocerophis ammodytoides* from San Juan Province, Argentina, with two novel lizard prey, *Pristidactylus scapulatus* and *Liolaemus cf. ruibali.*

SENTICOLIS TRIASPIS **(Green Ratsnake). DIET.** *Senticolis triaspis* is known to feed on small rodents, lizards, and birds (Reyna-Bustos et al. 2007. Anfibios y Reptiles del Bosque La Primavera. CUCBA, Gobierno de Jalisco. 125 pp.; Savage 2002. The Amphibians and Reptiles of Costa Rica: A Herpetofauna between Two Continents, between Two Seas. University of Chicago Press, Illinois. 934 pp.; Vázquez and Quintero 2005. Anfibios y Reptiles de Aguascalientes. CONABIO, CIEMA. 318 pp.). As with ratsnakes (*Pantherophis* spp.) and other semi-arboreal species, *S. triaspis* may inhabit caves where they presumably feed on bats (Schulz 1996. A Monograph of the Colubrid Snakes of the Genus *Elaphe* Fitzinger. Koeltz Scientific Books, Czech Republic. 439 pp.). Herein we report the first account of *S. triaspis* consuming a bat, *Eptesicus fuscus*.

On 12 August 2011, a juvenile *S. triaspis* was found in the municipality of Tuxcueca, Jalisco, Mexico (20.1397777°N, 103.1514444°W, datum WGS84; elev. 1635 m). The snake was crawling out of a hole in a wall full of bat refuges, about 2 m above the ground. When we captured the snake we detected the presence of a large prey item in its stomach and the snake subsequently regurgitated when placed in a bag. The recently ingested prey was identified as a bat, *Eptesicus fuscus* (Fig. 1). The wall bordered an ephemeral stream in tropical deciduous forest and was shared by other species of bats (*Artibeus hirsutus*, *A. jamaisencis*, *Tadarida brasilensis*, and another unidentified species).

FIG. 1. Prey item (*Eptesicus fuscus*) regurgitated by a *Senticolis triaspis* from Jalisco, Mexico.

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STEGONOTUS CUCULLATUS **(Slaty-grey Snake). DIET.** *Stegonotus cucullatus* is a colubrid snake native to the tropics of Papua New Guinea and Australia (Greer 1997. The Biology and Evolution of Australian Snakes. Surrey Beatty & Sons Pty Ltd., Chipping Norton. 358 pp.). The diet of *S. cucullatus* is varied, comprised largely of reptile eggs, but also includes insects, frogs, lizards, fish, and mammals (Brown et al. 2005. J. Trop. Ecol. 21:605–612; Greer, *op. cit.*; Trembath et al. 2009. Aust. J. Zool. 57:119–124).

A road-killed male *S. cucullatus* (SVL = 104 cm; total length = 124 cm) was collected at 1945 h on 19 May 2011 on the Arnhem Highway, in the tropics of the Northern Territory, Australia (12.65°S, 131.32°E; datum WGS84). On dissection its digestive tract was found to contain a large (SVL = 11.81 cm) primarily undigested agamid lizard (*Amphibolurus temporalis*). Within its distribution, *A. temporalis* is similar in appearance to *Amphibolurus gilberti*, from which it was distinguished on the basis of dorsal scale keel orientation (Wilson and Swan 2003. A Complete Guide to Reptiles of Australia. Reed New Holland, Sydney. 480 pp.). The only species of agamid previously recorded as a prey item for *S. cucullatus* is *Diporiphora* sp. (Shine 1991. Copeia 1991:120–131). Because *S. cucullatus* is primarily nocturnal and a capable arboreal predator (Brown et al., *op. cit.*), and *A. temporalis* is diurnal and generally sleeps in trees, it is likely that *S. cucullatus* preys on these large agamids during their sleep.

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***THAMNOPHIS EQUES* (Mexican Gartersnake). MORTALITY.** Abandoned, lost, or otherwise discarded fishing gear (ALDFG) represents a growing risk to aquatic environments. The ability of ALDFG to continue to fish (often referred to as "ghost fishing") has detrimental impacts on fish and other aquatic organisms (Macfadyen et al. 2009. Abandoned, Lost or Otherwise Discarded Fishing Gear. UNEP Regional Seas Reports and Studies, No. 185; FAO Fisheries and Aquaculture Technical Paper, No. 523. Rome, UNEP/FAO. 115 pp.). Here we report the death of two *Thamnophis eques* in abandoned fishing nets (ALDFG).

On 11 March 2012, during a visit to the shore of Lake Chapala near the pumping station in the Municipality of Chapala, Jalisco, México (20.311377°N, 103.142034°W, datum WGS 84; elev. 1530 m), we found two dead adult *T. eques* trapped in ALDFG (Fig. 1). Both individuals were located on the edge of a canal leading to the pumping station, a site commonly visited by local fishermen who usually fish with nets. On previous visits to the site we observed other organisms killed in abandoned fishing nets, mainly fishes but also several *Thamnophis melanogaster*. Further research is needed to determine the impact of the ALDFG in the local fauna of Lake Chapala.

Fig. 1. Two dead adult *Thamnophis eques* trapped in abandoned fishing nets at Lake Chapala, Jalisco.

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***THAMNOPHIS EQUES MEGALOPS* (Northern Mexican Gartersnake). PREDATION.** Documented instances of fish preying on snakes are generally rare and the extent to which these events affect local populations is unknown. Recent records including a brown trout preying on *Pituophis catenifer* in Utah, USA (Wamback and Engemen 2011. Herpetol. Rev. 42:618–619), a Rainbow Trout with a *Notechis scutatus* in its stomach in Australia (Clear 2011. Herpetol. Rev. 42:442–443), and a Longnose Gar attacking *Pantherophis spiloides* in Illinois, USA (McCallum et al. 2011. Herpetol. Rev. 42:443), demonstrate that a variety of fish species likely prey on snakes when provided the opportunity. Predators such as nonnative fishes, in combination with other threats, have undoubtedly contributed to the decline of *Thamnophis eques megalops* populations throughout all or portions of its range (U.S. Fish and Wildlife Service 2008. Fed. Reg. 73:71778–71826). One nonnative predator, *Micropterus salmoides* (Largemouth Bass), will apparently prey on "any moving thing small enough to swallow" (Minckley 1973. Fishes of Arizona. Arizona Game and Fish Dept., Phoenix, Arizona. 293 pp.), however, we are aware of few instances of bass preying specifically on gartersnakes (Hodgson and Hansen 2005. J. Freshwater Ecol. 20:793–794),

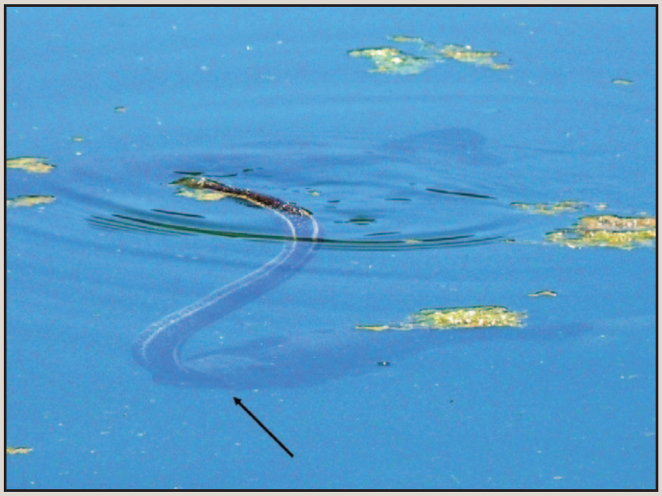

PHOTO BY DON ALTRINGER

Fig. 1. Largemouth Bass (*Micropterus salmoides*), attacking an adult *Thamnophis eques megalops* at Bubbling Ponds Hatchery, Arizona, USA. The bass in the foreground is indicated with a black arrow, and has swallowed much of the posterior half of the snake, while another bass can be seen behind the snake.

despite the apparent assumption that it occurs relatively commonly (U.S. Fish and Wildlife Service, *op. cit.*). Here we describe two instances of predation by Largemouth Bass on *T. eques* that we documented during a study of the gartersnakes at Bubbling Ponds Fish Hatchery, Yavapai Co., Arizona, USA (34.765°N, 111.895°W; datum NAD83).

Largemouth Bass maintained in a single, earthen pond at the hatchery average 1.3–1.8 kg (400–500 mm standard length), with some larger individuals reaching over 2 kg. At 1030 h on 16 July 2010, we witnessed a neonate *T. eques* enter the pond, startled off the bank by our approach. Immediately, a Largemouth Bass engulfed the snake. After momentarily releasing the snake, the bass bit it again and appeared to swallow the snake. At 1000 h on 22 June 2011, a visitor to the hatchery observed a Largemouth Bass attacking the tail of an adult (ca. 600 mm total length) *T. eques* (Fig. 1). The snake struggled to continue swimming for ca.15 min. Eventually it was dragged under water, after which several other bass attacked it as well, and the snake was not seen again. Although the frequency with which bass prey on snakes appears to be low (J. R. Hodgson, pers. comm.), the implications of these observations for conservation of *T. eques* are clear; conversion of aquatic habitats to impoundments stocked with bass has the potential to seriously affect small local gartersnake populations.

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***THAMNOPHIS GIGAS* (Giant Gartersnake). MOVEMENT.** *Thamnophis gigas* historically inhabited marshes in the Central Valley of California, but currently inhabits rice fields and their supporting infrastructure of canals in the Sacramento Valley (northern portion of the Central Valley). Because of extensive habitat loss, *T. gigas* is listed as Threatened by the State of California and the U.S. Fish and Wildlife Service. Existing populations of *T. gigas* are often fragmented by inhospitable habitats (uplands, forests, most agriculture) and roadways. We report the movement of an individual *T. gigas* across a busy highway, and suggest that movement occurred through a culvert.

On 8 July 2010, one of us (ECH) captured, marked, and released a small (SVL = 362 mm; mass = 30 g) female *T. gigas* 349 m east of California Highway (CA Hwy) 99 in Sacramento Co., California, USA. On 5 July 2011, the same individual was recaptured 928 m to the west of the original capture location (579 m west of CA Hwy 99; Fig. 1). The individual had grown 263 mm and gained 104 g in the intervening year. She was subsequently captured on 6 July 2011, 99 m east of her location on 5 July 2011, and again on 7 July 2011, 133 m east of her location on 6 July 2011 (Fig. 1). She might represent a young female dispersing to establish a stable home range.

The snake's movement across CA Hwy 99 is significant because of the volume of traffic on and characteristics of CA Hwy 99 and characteristics of the box culvert through which the individual likely passed. CA Hwy 99 consists of four lanes of traffic (each direction is paved for a width of 13 m) separated by an 11 m median consisting of herbaceous vegetation. To the east, the road is bordered by 28 m of herbaceous vegetation, then a 9-m wide canal oriented north-south, with about 10 m between the east bank of this canal and the end of the east-west canal in which the individual was initially captured. A small (approx. 0.6 m diameter) cylindrical culvert connects the east-west canal to the north-south canal. To the west, CA Hwy 99 is bordered by 23 m of herbaceous vegetation, then a 5 m wide canal oriented north-south, with about 18 m between the west bank of this canal and the end of the east-west canal in which the individual

Fig. 1. Observations (yellow dots, with dates), locations of culvert openings (black stars), and potential movement paths (red lines; solid = culvert passage, dashed = direct overland route) of *Thamnophis gigas* #1461. Note that 2010 and 2011 observations are bisected by California Highway 99.

Fig. 2. The 1.8 m x 1.8 m box culvert 89 m long through which *Thamnophis gigas* #1461 likely passed. The culvert is located 1.2 km south of the east-west canal in which the individual was captured.

was subsequently captured. *Thamnophis gigas* are highly aquatic and rarely move more than a few meters from aquatic habitats (USGS, unpubl. data), so the total overland distance of 130 m (including the 14 m of north-south canals) itself represents a substantial barrier to movement.

In addition to the distance over which upland movements would have to occur, CA Hwy 99 has very high traffic volumes. In 2002, average annual daily traffic volume was 41,000 vehicles (CA DOT; www.dot.ca.gov). This volume of traffic is nearly four times that reported for US Hwy 441 in Florida, where culverts and barrier walls were constructed to reduce mortality of small vertebrates (Dodd et al. 2004. Biol. Conserv. 118:619–631). It is likely that residential and commercial development in the Natomas Basin have substantially increased traffic volumes since 2002. The high volume of traffic and great width of CA Hwy 99 make it highly unlikely that the individual crossed the road's surface.

If the individual did not cross over the road's surface, it could have crossed under CA Hwy 99 through culverts located 1.2 km south or 1.6 km north of the canal in which the individual was captured. The culvert to the south was a single box culvert approximately 1.8 m wide x 1.8 m tall x 89 m long, with an approximate water depth of 0.2 m and air clearance of 1.6 m (Fig. 2). Use of this culvert would imply a net movement of 3.3 km over 362 days. The culvert to the north was a double box culvert, with both passages measuring 2.1 m wide x 2.1 m tall x 102 m long. In contrast to the south culvert, these culverts are located near a pumping station, and were nearly filled with water (20 cm air space on 1 May 2012). Use of these culverts would imply a net movement of approximately 4.1 km. Because of the shallower depth and slower movement of water, greater light penetration, greater air space, and closer proximity to the canal in which the individual was captured, we suggest that the individual more likely passed through southern culvert than the northern culverts.

The characteristics of ideal culverts for wildlife crossings (wide, short length, allowing the penetration of light, and with fences to direct movement away from the road and into the culvert; Yanes et al. 1995. Biol. Conserv. 71:217–222.; Woltz et al. 2008. Biol. Conserv. 141:2745–2750) are in marked contrast to the long, narrow box culvert through which the individual likely passed. If individual *T. gigas* pass through culverts of this type and length, it is likely that bridges and culverts of shorter length or greater width would allow, at a minimum, genetic connectivity among populations separated by roadways. Examining the probability of use of culverts of different characteristics and enhancing culverts to improve passage rates of *T. gigas* will promote gene flow and could maintain demographic connectivity among otherwise fragmented populations.

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THAMNOPHIS VALIDUS CELAENO **(Baja California Gartersnake). ARBOREALITY.** Terrestrial and arboreal habitats differ in the type and amount of prey they offer, vulnerability to predation, and in physical factors such as temperature and humidity. Many snake species are highly specialized for either terrestrial or arboreal life and rarely exploit alternative habitats (Shine et al. 2005. J. Therm. Biol. 30:179–185). However, some taxa display ontogenetic shifts in habitat use or use a broader range of habitats on occasion (Shine et al. 2002. Ethology 108:897–910). Species in the genus *Thamnophis* are primarily terrestrial, although some species occasionally climb in vegetation. For example, *T. sirtalis parietalis* (Red-sided Gartersnakes) use arboreal habitats to access higher temperatures than those available on the ground (Shine et al. 2005, *op. cit.*). *Thamnophis validus* is a semiaquatic species with a fragmented distribution in the water systems of the Cape Region, Baja California Sur, México (Grismer 2002. Amphibians and Reptiles of Baja California, including its Pacific Islands and the Islands in the Sea of Cortes. Univ. California Press, Berkeley. 399 pp.). *Thamnophis validus* is primarily nocturnal, which distinguishes it from many other gartersnakes (Rossman et al. 1996. The Garter Snakes: Evolution and Ecology. Univ. Oklahoma Press, Norman. 336 pp.), and is strongly tied to aquatic habitats (De Queiroz et al. 2001. Copeia 2001:1034–1042). Herein we report the first account of arboreal habitat use for *T. validus celaeno*.

Fig. 1. *Thamnophis validus celaeno* in El Chorro, Agua Caliente, Baja California Sur, México, *in situ*, exhibiting arboreal behavior.

On 30 August 2011, at 2045 h (air temp. = 28.7°C), we observed a juvenile female *T. validus celaeno* (SVL = 213 mm; total length = 286 mm; 7.5 g; cloacal temp. = 32.9°C) 40 cm above the ground in *Ambrosia monogyra* vegetation (Fig. 1) along the margin of a pond in El Chorro, Arroyo Agua Caliente, Baja California Sur, México (23.43996°N, 109.80757°W, datum: WGS84; elev. 182 m). This species has also been seen climbing on *Typha dominguensis* at this same locality and on *Baccharis salicifolia* in Cañon de la Zorra (A. Cota pers. comm.), both localities on the eastern slope of the Sierra de la Laguna, Baja California Sur. Because *T. validus* feed primarily on aquatic prey, we suggest that this may be a thermoregulatory behavior.

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